US Army Corps
of Engineers
Baltimore District

DRAFT

Supplemental Environmental Impact Statement (SEIS) for

Design Modifications and Recreational Enhancements to the Wyoming Valley Levee Raising Project at the Wilkes-Barre, Pennsylvania River Commons

August 2004

Cover Sheet

Responsible Agency and Lead Federal Agency: U.S. Army Corps of Engineers

Title: Supplemental Environmental Impact Statement (SEIS) for the Design Modifications and Recreational Enhancements to the Wyoming Valley Levee Raising Project at the Wilkes-Barre, Pennsylvania River Commons

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Abstract:
This Draft SEIS analyzes the potential environmental consequences of implementing design modifications and recreational enhancements to the Wyoming Valley Levee Raising Project at the Wilkes-Barre, Pennsylvania River Commons. The original EIS was titled *Final Supplemental Environmental Impact Statement for the Wyoming Valley Levee Raising Project, Luzerne County, Pennsylvania*. The Notice of Availability was published in the Federal Register on Wednesday, February 28, 1996, Vol. 61, No. 40. Alternative 4, which includes the addition of two portals through the levee, a river landing, a fishing platform/dock, and an amphitheater and stage, was identified as the preferred alternative. The other alternatives considered represent fewer recreational features and as required, the No Action alternative is also evaluated. The implementation of the proposed action would maintain the level of flood protection necessary under the levee raising project, but would also reconnect Wilkes-Barre to the Susquehanna River. These modifications would help reclaim the river as a civic resource for the daily life of residents and visitors and would help to make the river a unique amenity for the area.

Public Comments:
Prior to preparation of the Draft SEIS, public involvement was conducted through the publishing of a Notice of Intent in the Federal Register and holding a public scoping meeting November 6, 2002. Additionally, coordination with resource agencies was conducted through an agency coordination letter that solicited their comments. The Corps of Engineers considered these comments received by letter and formal statements made at public scoping meetings. A 45-day comment period on this Draft SEIS begins with the publication of the U.S. Environmental Protection Agency Notice of Availability in the Federal Register. A public hearing to discuss and receive comments on the Draft SEIS will be held at a time and location to be announced in the Notice of Availability. Individuals and agencies may present written comments relevant to the Draft SEIS or request to be placed on the mailing list for announcements and for the Final SEIS by sending the information to Mr. William Abadie at the address above. The comments received during the comment period will be considered in the preparation of the Final SEIS. Late comments will be considered to the extent practicable.

Summary

Federal flood control projects along the Susquehanna River have protected communities in the Wyoming Valley of northeastern Pennsylvania since the late 1930's. However, in June 1972, Tropical Storm Agnes struck, and the Susquehanna River overtopped the levee system in the Wyoming Valley, causing severe damage in many communities. In response, the U.S. Congress in 1986 authorized raising the Wyoming Valley levee system and implementing other flood damage reduction measures. Construction of the levee raising project was initiated in spring 1997 and is ongoing.

In urbanized areas of the Wyoming Valley, including the City of Wilkes-Barre, the levee and floodwall system have created a physical, psychological, and aesthetic barrier between the communities and the Susquehanna River. Through public workshops in 1999, a conceptual plan was conceived for the City of Wilkes-Barre riverfront that would restore the connection between the city and the river. The plan consists of a riverfront park to be located on the river side of the levee at downtown Wilkes-Barre and to be accessed via portals (i.e., gates) in the levee/floodwall system. The Luzerne County Flood Protection Authority, which is the non-Federal project partner for the Wyoming Valley Levee Raising Project, requested that the conceptual riverfront plan for Wilkes-Barre be incorporated into the project. This request resulted in initiation of a General Reevaluation Report (GRR) and this supplemental Environmental Impact Statement (SEIS) to investigate the potential environmental effects of an array of alternative plans based on the conceptual riverfront plan for Wilkes-Barre.

Proposed features for the riverfront park included two portals, a river landing, a fishing platform/dock, and an amphitheater and stage. These features were combined into the following alternative plans:

- Alternative 1 – Upstream and Downstream Portals,
- Alternative 2 – Upstream and Downstream Portals, and River Landing,
- Alternative 3 – Upstream and Downstream Portals, River Landing, and Fishing Platform/Dock,
- Alternative 4 – Upstream and Downstream Portals, River Landing, Fishing Platform/Dock, and Amphitheater and Stage, and
- Alternative 5 – Upstream and Downstream Portals, River Landing, and Amphitheater and Stage.

In addition to these features, miscellaneous recreational amenities (e.g., lights, seating areas with benches, trees/vegetation, educational kiosks, and trash receptacles) would be included for each of the alternatives. Regardless of the alternative selected, the existing construction access road at the riverside base of the levee would be paved.

Alternative 4, which includes two portals, the river landing, fishing platform/dock, and the amphitheater and stage, is the PREFERRED ALTERNATIVE for the Corps.

Issues and Concerns

Public involvement was conducted through the publishing of a Notice of Intent (see Section 9, Public Involvement) in the Federal Register and holding a public scoping meeting November 6, 2002. Additionally, coordination with resource agencies was conducted through an agency coordination letter that solicited their comments.

In accordance with the requirements of the Fish and Wildlife Coordination Act (FWCA), coordination with the U.S. Fish and Wildlife Service (USFWS) has been ongoing with respect to the various activities within the Wyoming Valley. The USFWS has received a formal letter with an invitation to provide any new or updated information relative to known species of concern, but the most recent letter of coordination (see Section 3.3.4) confirmed that there are no rare, threatened, or endangered species in or surrounding the project area.

The potential effects of the original levee raising project on pre-historic and historic cultural resources was coordinated with the Pennsylvania State Historic Preservation Officer (SHPO). The Corps has prepared a Memorandum of Agreement (MOA) with the SHPO that specifies the nature and extent of compliance actions by the Corps and Local Sponsor throughout implementation of the Levee Raising project. Ongoing coordination with the SHPO would address any additional requirements to implement the current proposal.

The Corps of Engineers continues to negotiate with the Congressional delegation, the Assistant Secretary of the Army (Civil Works), and the Luzerne County Flood Protection Authority regarding what portions of the project are within Corps policy to participate in constructing along with the appropriate cost-sharing percentage. The evaluation presented in this SEIS was developed without a final determination on the extent of Federal participation. The scope of the analysis comprehensively presents the features being considered and does not inappropriately segment the analysis based on the extent of federal participation. In other words, the scope of this analysis addresses the maximum that could be constructed; features less than those assessed in the SEIS could be constructed, but would be considered bounded by the analysis herein. Resolution of the Federal participation issues is expected prior to publication of the Final SEIS.

Major Conclusions and Findings

The implementation of the proposed design modifications and recreational enhancements to the Wilkes-Barre River Commons would maintain the level of flood protection necessary under the levee raising project, but would also reconnect the city to the Susquehanna River. These modifications would help reclaim the river as a civic resource for the daily life of residents and visitors and would help to make the river a unique amenity for the area. The environmental resources would be maintained and economic benefits would be gained from the recreational features proposed for this project. Some of the proposed actions would extend into the Susquehanna River (fishing platform/dock pilings and river landing). Therefore, in accordance

with the Clean Water Act, a Section 404(b)(1) evaluation has been completed and is in Appendix D of this document. A State Water Quality Certificate will be requested during the public review of the Draft SEIS and will be appended to the Final SEIS.

Impact Analysis Summary

Detailed description and evaluation is found in Section 4, Environmental Consequences, but the following list is provided in summary. Implementing the PREFERRED ALTERNATIVE (Alternative 4) would result in the following environmental impacts:

- permanent minor, re-grading to a previously disturbed landscape,
- temporary increase in Susquehanna River turbidity caused by the river landing and fishing platform/dock construction,
- temporary increase in Susquehanna River turbidity caused by the placement and subsequent removal of rock from the temporary groins at the river landing,
- permanent increase in rock-covered benthic habitat by leaving groin base after deconstruction and by creating fish habitat at edge of river landing,
- temporary increase in Susquehanna River turbidity from re-mobilized sediment re-entering the Susquehanna River during post-flood clean-up,
- permanent removal of mature sycamore, silver maple, and elm trees upstream of the Market Street Bridge to enhance the view from the portal and permit construction of stairs and ramps,
- permanent cutting and maintenance of an approximately 30-foot wide, 2-5-year aged, band of riparian shrub fringe vegetation along the downstream bank of the riverfront,
- permanent recreational benefits resulting from a predicted increase of more than 300,000 visits to the park per year (General Reevaluation Report),
- permanent aesthetic beneficial effects of reconnecting downtown Wilkes-Barre to the waterfront with the portals and other recreational features,
- temporary adverse aesthetic effects during construction,
- temporary increase in traffic with an additional 4,765 trucks and 120,500 miles traveled during the 600 - calendar day construction period,
- temporary cumulative effects associated with construction would be limited to minor and temporary increases in traffic, noise, and fugitive dust,
- permanent cumulative effects associated with the recreational enhancements would be an event-related increase in trash/rubbish and an increase in pedestrian and passenger vehicle traffic in and around the River Commons.

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1 Purpose and Need for Corps Action

1.1 Project History and Study Authority

The Wyoming Valley and city of Wilkes-Barre are in Luzerne County, in the northeast portion of the Commonwealth of Pennsylvania, approximately 110 miles northwest of New York City, and 90 miles northeast of Harrisburg, Pennsylvania (Figures 1 and 2). From 1891 to 1991, the Wyoming Valley was subjected to 56 floods that exceeded the estimated channel bank capacity of 127,000 cubic feet per second (cfs). Federally authorized flood control projects were constructed in the Wyoming Valley during the late 1930's, 1940's, and 1950's. The existing system of flood control projects (Figure 3) were designed to protect against a flood the magnitude of the March 1936 flood, which was 232,000 cfs, plus three feet of freeboard (at the time it was constructed, it provided protection from the storm of record, but is now considered a 50-year level of protection).

The origins of the Levee Raising Project began in 1972 after the 4 to 5 foot overtopping of the existing levee systems by Tropical Storm Agnes (1972). In the years following Agnes, various studies were completed in order to determine the best alternative to provide protection against flood flows that would be caused by a reoccurrence of Tropical Storm Agnes (June 1972). The ongoing project consists of raising existing levees and floodwalls between three and five feet; modifying closure structures, drainage structures, and pump stations; relocating utilities; adding minor recreation facilities; and providing some new levees, closure structures, and floodwalls to maintain the integrity of the existing flood control system. At each phase of the alternative evaluation process for the ongoing project, reporting documents and National Environmental Policy Act (NEPA) documents were completed by the U.S. Army Corps of Engineers. Providing additional protection for the Wyoming Valley was authorized by the Water Resources Development Act of 1986 (WRDA 96) as modified by Section 101 of the FY 90 Energy and Water Appropriations Act, and Section 102(w) of the Water Resources Development Act of 1992 (WRDA 92).

The first stage of this evaluation was the 1981 Phase I General Design Memorandum (GDM) and Environmental Impact Statement (EIS). The 1981 Phase I GDM/EIS evaluated alternative means of increasing the level of protection in the currently protected communities by raising the height of the existing system with levees and/or floodwalls. The 1995 Phase II General Design Memorandum and Supplemental EIS (SEIS) refined the selected plan identified in the 1981 Phase I GDM/EIS. The secondary evaluation in the 1995 Phase II GDM/SEIS and 1996 Phase II GDM/SEIS Update addressed not only refinements in the levee raising design, but provided environmental, aesthetic and recreation features as part of the project. After completion of the Phase II GDM/SEIS, several smaller supplemental environmental review documents were prepared for minor design changes, minor wetland impacts (USACE, 1997), and wetlands and endangered species impacts (USACE, 1998).

In 1999, the Luzerne County Flood Protection Authority (LCFPA) sponsored a citizens' workshop to develop a community-based concept plan for the downtown Wilkes-Barre Susquehanna riverfront (Figure 2). This workshop culminated in a recommendation to the

Luzerne County Flood Protection Authority that addressed development of the historic Wilkes-Barre River Commons waterfront near the Market Street Bridge.

Based on the input, the LCFPA retained the services of a consultant to take the community's recommendations and develop them into a conceptual plan with preliminary drawings and a preliminary cost estimate. The project that the consultant developed covers approximately 25 acres and includes 4,200 feet from South Street at the downstream end at the Wilkes University campus to the Veterans Memorial Bridge and Luzerne County Courthouse near Kings College at its upstream end.

After completion, the consultant's conceptual plan was reviewed by the Corps of Engineers and the LCFPA. The plan was evaluated by taking into consideration the previously approved flood control features, existing topography, utilities and physical restraints, conservation of the River Commons, the practicality and efficiency of the plan, and the appropriateness of the plan as part of the existing flood control project.

Because the Wilkes-Barre Riverfront Plan represented a substantial change to the design and related work of the ongoing levee raising in the Wilkes-Barre riverfront, the LCFPA requested that the conceptual plans be added to the Wyoming Valley Levee Raising Project. The Corps of Engineers continues to negotiate with the Congressional delegation, the Assistant Secretary of the Army (Civil Works), and the Luzerne County Flood Protection Authority regarding what portions of the project are within Corps policy to participate in constructing along with the appropriate cost-sharing percentage. The evaluation presented in this SEIS was developed without a final determination on the extent of Federal participation. The scope of the analysis comprehensively presents the features being considered and does not inappropriately segment the analysis based on the extent of federal participation. In other words, the scope of this analysis addresses the maximum that could be constructed; features less than those assessed in the SEIS could be constructed, but would be considered bounded by the analysis herein. Resolution of the Federal participation issues is expected prior to publication of the Final SEIS.

1.2 Purpose and Need

The Phase II GDM/SEIS (1996) recognized that there would be detrimental aesthetic and recreational effects to communities where flood protection passed through residential and commercial areas. Wherever possible, the levee raising design was to be sensitive to aesthetic, recreation, and environmental considerations. Contemporary, Corps of Engineers projects have incorporated a number of design features that urban areas utilize in order to minimize the effects of large flood control projects. The purpose of modifying the Levee Raising Project through the Wilkes-Barre River Commons is to reconnect downtown Wilkes-Barre to the Susquehanna River through improved public access and increased waterfront recreational opportunities. These modifications would help to reclaim the river as a civic resource for the daily life of residents and visitors, and to make the river a unique amenity for the city.

1.3 Relationship of the Riverfront Plan to other Projects (Connected Actions)

The Council on Environmental Quality (CEQ) regulations require that "connected actions, cumulative actions, and similar actions" (40 CFR 1508.25) be considered together in a single EIS or SEIS. Connected actions are defined as actions that: (i) automatically trigger other actions, which may require environmental impact statements, (ii) cannot or will not proceed unless other actions are taken previously or simultaneously, and (iii) are interdependent parts of a larger action and depend on the larger action for their justification. If an action, when viewed with other proposed actions, has the potential for cumulatively significant impacts (i.e., a "cumulative action"), the actions should be discussed and evaluated in the same impact statement. Similar actions are defined as actions which, when viewed with other reasonably foreseeable or proposed agency actions, have similarities that provide a basis for evaluating their environmental consequence together, such as timing or geography.

Within the Wilkes-Barre waterfront, there are other ongoing projects in various stages of planning, design, and construction. None of these other actions would be considered cumulative actions (40 CFR 1508.25) because (i) they do not automatically trigger other actions, (ii) they can proceed independently and do not require other actions to be taken previously or simultaneously, and (iii) they are not interdependent parts of a larger action that depend on the larger action for their justification.

Improvements to the flood protection measures or recreational features for Wilkes-Barre have independent utility and are cost-justified on their own. The other projects would not be considered similar as they are either too speculative, geographically diverse, or are discrete and therefore do not collectively constitute either a "major Federal action" (40 CFR 1508.18) or activities sufficiently "systematic and connected" (40 CFR 1508.18(b)(3)) to require a programmatic EIS. The scope of the SEIS will be limited to addressing the specific, local modifications to the flood protection and recreational enhancements for the Wilkes-Barre waterfront. To the extent, information is available on other planned projects; the cumulative impacts assessment qualitatively addresses how these other projects could affect this proposed action.

1.4 Objective of the Supplemental Environmental Impact Statement

NEPA established a national environmental policy and goals for the protection, maintenance and enhancement of the environment. It also provides a process for implementing these goals within Federal agencies. It requires all Federal agencies to incorporate environmental considerations in planning and decision-making. NEPA also established the President's CEQ and empowered them to develop regulations by which all Federal agencies would comply with NEPA. These regulations are published in the Code of Federal Regulations (CFR) at 40 CFR 1500-1508.

The Corps of Engineers has promulgated their own Procedures for Implementing NEPA (ER 200-2-2) to provide guidance for the procedural provisions of NEPA. ER 200-2-2 supplements, and is used in conjunction with, the CEQ regulations.

Within the CEQ NEPA regulations and ER 200-2-2, a process is set forth where all agencies must assess the environmental impact of proposed Federal actions and consider reasonable alternatives to their proposed actions. For those actions with the greatest potential to create significant environmental effects, the consideration of the proposed action and alternatives is presented in an EIS or SEIS.

The Corps of Engineers has incorporated environmental values into its decision-making process. The information developed in the SEIS has led to alterations in project design, implementation of mitigation measures, and an enhanced opportunity for public involvement in the decision-making process. It also has allowed the Corps to address compliance with other environmental laws as part of a single review process rather than through separate reviews to reduce paperwork and ensure comprehensive compliance.

1.5 Scope

In accordance with CEQ requirements, the Corps of Engineers is integrating the NEPA analysis early in the planning process to ensure that environmental values are considered in decision making (40 CFR 1501.2). This SEIS describes the alternatives that the Corps is considering for modification of the Levee Raising Project to provide improved river access and riverfront recreation in downtown Wilkes-Barre. The SEIS also estimates the environmental impacts that could result from the construction and operations associated with each of the alternatives, based on information from conceptual designs for the action alternatives and other information developed specifically for the SEIS. For each alternative, the impacts to the environment and human health that might occur during construction and operation are estimated and presented in the SEIS. In addition, the SEIS describes the potential impacts of a No Action alternative, as required by NEPA. The impacts of the No Action alternative provide a basis for comparison with the impacts of the action alternatives. The No Action alternative is defined as the continuation of actions the U.S. Army Corps has already taken or is currently taking. As such, No Action is defined as completion of the Wyoming Valley Levee Raising Project, as projected in the 1995 Phase II GDM/SEIS and the 1996 Phase II GDM/SEIS update.

1.6 Tiering and Incorporation by Reference

Federal agencies are encouraged to tier their environmental impact statements to eliminate repetitive discussions of the same issues and to focus on the actual issues ripe for decision at each level of environmental review. Whenever a broad environmental impact statement has been prepared and a subsequent EIS is then prepared on an action included within the entire program or policy (such as a site specific action) the subsequent statement need only summarize the issues discussed in the broader statement and incorporate discussions from

Tiering

Tiering is a NEPA-compliance term defined by the Council on Environmental Quality NEPA-Implementing Regulations (40 CFR 1508.28). The term refers to the process of covering general matters in broader environmental impact statements and addressing more detailed decision-making with narrower EISs. The subsequent EISs incorporate by reference the general discussions from the broader EIS and concentrate solely on the issues specific to the lower tiered EIS.

the broader statement by reference and shall concentrate on the issues specific to the subsequent action.

Agencies are instructed to incorporate material into an EIS by reference when the effect will be to cut down on bulk without impeding agency and public review of the action. The incorporated material is to be cited in the EIS and its content briefly described.

The first program-level EIS was the 1981 Phase I GDM and EIS prepared to address the entire levee raising throughout the Wyoming Valley. The second tier EIS was the 1995 Phase II GDM/SEIS and the 1996 Phase II GDM/SEIS update evaluating issues that were then ripe for decision making. This SEIS is the third level of the tiered environmental review process and examines site-specific issues relative to the levee raising features within the Wilkes-Barre River Commons.

The U.S. Army Corps of Engineers has been studying the affected environment of the Susquehanna River and Wyoming Valley on a continuing basis for decades. As such, there is an extensive database reflected in the previously published environmental evaluation documents prepared by the Corps of Engineers and others. As encouraged by the CEQ NEPA-implementing regulations (40 CFR 1500-1508), where agencies are preparing SEISs, discussions that can be referenced from the previous EISs should be incorporated by reference and the discussion should focus on the new issues.

2 Project Description and Alternatives

2.1 Overview

This analysis is being performed in the early planning stage of the project and the features described are based on conceptual reference designs. Future modifications in design are expected to occur based on detailed engineering, cost evaluations, environmental considerations, and public participation as the design proceeds to the plans and specifications stage. While the designs featured in this evaluation are preliminary, the functionality of the features and the footprint for their construction should remain substantially the same. Estimates of materials necessary to construct the portals were developed from the preliminary cost estimates developed from a concept level design (USACE, 2003a). As such, these numbers are intended to be used to quantify the magnitude of the proposed action and not to prescribe the detailed quantities or design prior to complete design and development of the plans and specifications for final design.

The estimated environmental impacts described later in Section 4 have been developed to create an envelope of estimated impacts within which minor design changes can be made without compromising the integrity of the assessment. As such, the description of the features within the following sections does not represent any formal commitment to final design, equipment for use, vendors for supply of materials, or methods of construction but gives an approximation of how the features could be constructed and the associated impacts thereof.

To construct the various features, the usual type of construction equipment would be used, such as dozers, excavators, cranes, compactors, hauling trucks, barges, and small boats, vibratory hammers for the sheetpiling and piles, and other miscellaneous equipment. Materials would be transported to and from the site using normal size on-road hauling (dump) trucks. Some of the work would be performed in the river and could be accomplished with the use of small barges (or floating work platforms).

In addition to the activities necessary to construct these features, this proposal would include all routine maintenance (e.g., re-paving, sealing walkways, replacement of plantings, repairs to structures, painting, grounds maintenance, in-kind replacements) for both the sponsor operations and maintenance (O&M) and Corps of Engineers-related activities necessary to maintain the safety or integrity of the flood protection system. All of these actions would be assumed included in the proposed action.

As discussed above, the evaluation presented in this document was developed without a final determination on the extent of Federal participation. The scope of the analysis comprehensively presents the features being considered and does not inappropriately segment the analysis based on the extent of federal participation. The alternatives presented here are the maximum that would be constructed. Resolution on the extent of Federal participation is expected prior to issuance of the Final SEIS.

2.1.1 Design Features

The design modification and recreational enhancements evaluated are various combinations of the features originally envisioned by the Luzerne County Flood Protection Authority-sponsored citizens' workshop. Each of these components (Figures 4A, 4B, 5, and 6) would modify the existing flood protection structures along the downtown Wilkes-Barre waterfront or add recreational enhancements to the area. The features that are being evaluated include portals, a river landing, a fishing platform/dock, an amphitheater and stage, a paved riverside access road, and various other recreational accoutrements (benches, trash receptacles, etc.).

Portals - Approximately 60-foot wide and 12-foot high portals through the levee would provide pedestrian and emergency access to the Susquehanna River just upstream of the Market Street Bridge and across from the Northampton Street and River Street intersection. During a flood, the portals would be closed with flood gates.

River Landing - Upstream of the Market Street Bridge, a river landing would be constructed on the existing stability berm (approximately 900 feet long and 70 feet wide). When completed, this river landing would create a concrete-surfaced, 1.2-acre riverfront plaza for waterfront events (e.g., concerts, 4th of July fireworks, art shows, ethnic food festivals, etc.). A concrete curb, or similar structure, at the edge of the river landing would be provided for pedestrian safety. The river landing would require limited re-grading, re-configuring, and a riverside expansion of the rock stability berm to accommodate project features.

Fishing Platform/Dock – Connected to the river landing would be an approximately 340-foot long by 12-foot wide fishing platform/dock. Access to the fishing platform would be via a ramp

directly from the river landing and a set of stairs. The dock itself would not have permanent boat slips, but would have adequate fendering to provide a location where boats could temporarily tie-up for a few hours at a time (public landing). The feature would compliment the existing boat launch in Nesbitt Park, across the river in Kingston, by providing additional areas for public access for fishing and recreational boating.

Amphitheater and Stage - The amphitheater and stage would be constructed just downstream of the Market Street Bridge but upstream of the downstream portal. The amphitheater would consist of large stones or reinforced concrete blocks placed into the slope to provide bench seating for approximately 750 people. The majority of the rows would be below the riverside access road with one row of seats above the riverside access road. The performance stage would consist of a concrete slab placed on a layer of sub-base stone, on top of the existing rockfill berm.

Paved Riverside Access Road - At the completion of the levee raising and the Riverfront Plan, the riverside access road at the base of the riverside of the levee would be paved as an element to the riverfront development plan. The paving of this road would be an improvement for recreational purposes and provide a biking/jogging/walking trail along the riverside toe of the levee.

Miscellaneous Recreational Accoutrements - The flood control project, as designed and constructed throughout the Wyoming Valley, includes recreational features in the basic design. This reach of the Wilkes-Barre levee would include similar recreational features such as lights, seating areas with benches, trees/vegetation, educational kiosks, and trash receptacles.

2.2 Alternatives

2.2.1 Portals Only (Alternative 1)

Two approximately 60-foot wide portals would provide pedestrian and emergency access to the Susquehanna River just upstream of the Market Street Bridge at the same grade as the Historic River Commons and across from Northampton Street. The portal closure structures would be closed during flooding to maintain the integrity of the flood protection system. The portals would be pedestrian friendly and inviting to connect the river to the city without compromising Agnes-level flood control and protection.

This alternative would only involve the construction of the two portals. No other features (e.g., river landing, amphitheater) would be constructed. Figure 5 provides a cross sectional view of the upstream portal.

2.2.1.1 Portal Construction

Although not final design, a reference design for the portals was described for the purpose of evaluation. The concept design for the closure structures themselves was assumed to be two 12

foot high by 32 foot wide aluminum roller gate sections suspended from a track attached to the underside of a pedestrian bridge. The bottom of the gate would travel in a trench built into the sill and would be drawn tight against the side of the sill when in the closed position. The gates would likely be constructed of aluminum, consisting of a skin plate, stiffeners, and vertically-spanning I-beams.

When not in use, the portal gates would be contained out-of-sight within the concrete abutments at each end of the pedestrian bridge and the sill trench would be covered with slip-resistant aluminum plating.

Closing each portal is assumed to require a few hours and at least three persons to deploy. The bolted-down sill plates would be removed, the gate storage door boxes would be opened and the gates would be drawn out manually. A truck winch or block and tackle could be required to get the gates started out of opening. Once the gates were rolled into place, the bottom seal would be drawn tight against the adjacent concrete surface by use of turnbuckles and the end seals would be bolted in place.

The majority of the portals structure would be concrete and the facade could be some form of stone or decorative concrete. The proposed bridge, across the top of the portal, would likely be painted steel with an eight to ten foot wide, arched concrete deck supported with concrete abutments with wingwalls although other bridge types would also be feasible. The bridge span would be approximately 65 feet. The ends of the bridge would be several feet higher than top of the flood protection, requiring sloping of the approaches. The sill of the closure structure would be constructed of concrete with sheetpiling installed below its foundation to control under seepage.

The final design for approach slopes and the arch of the bridge would comply with the Uniform Federal Accessibility Standards (UFAS). These standards are design requirements for facilities designed and built with federal funds. Lighting would be incorporated in the bridge design to match the park-wide lighting fixtures. On the landside, the concept design assumed that the portals would include two sets of stairs and one or two ramps flanking the entrance that would provide access to the top-of-levee walkway. On the riverside, the portals were assumed to include two ramps and a 60-foot wide set of stairs that would provide access down to the riverside access road. Forty-two inch high aluminum railing, or similar retaining structure, would be placed along the stairs.

Prior to construction of the portals, a temporary sheetpile cofferdam would be constructed to the riverside of the existing levee and to the landside of the riverside access road to maintain Agnes-level flood protection during construction. The sheetpile cofferdam would be in place for about 12 to 18 months and would be approximately 320 linear feet in length for each portal. At the completion of construction, the sheetpile used in the cofferdams would be pulled and salvaged.

Portal construction would take approximately 18 months to complete and would utilize approximately one acre of project property (including material laydown and actual feature construction) within the previously disturbed footprint of levee construction activities. Prior to

building the portals, portions of the existing sheetpile and levee would be removed to prepare for the construction. Depending on the timing of portal construction, the sheetpile may not yet be capped with concrete. To provide a bounding evaluation in the SEIS, the evaluation assumed the cap would have been completed and would need removal as well as the removal of additional levee fill, paving, and drains. Efforts to coordinate construction schedules would be made to avoid construction of items that would need to be removed for portal construction.

For each portal, construction would require the removal of approximately 300 linear feet of 15-foot long sheetpile (53 tons), 130 linear feet of levee, and additional foundation excavation. Preliminary estimates indicate approximately 2,500 cubic yards of soil would be removed from the existing embankment to construct each portal and closure structure. After creating the necessary gap in the existing levee, portal construction would include building the closure and storage boxes for the flood gates, concrete work for wing walls and stairs, earthwork to re-grade the site after construction, stone and pavement work for handicap access, bridge installation, under bridge paving, paving the apron to the riverside access road, re-landscaping the area, and all necessary construction management activities (e.g., sediment control activities) needed to complete the portal construction. Table 2.1 provides a summary of activities for portal construction.

For the duration of the construction activities, sediment control activities would be implemented to minimize the effects of the ongoing work outside the 1-acre area actively used during construction. This would include the installation of silt fences, temporary rip-rap placement to stabilize slopes susceptible to erosion, and using a street-sweeper to clean road surfaces.

Operations and Maintenance (O&M)

A minimum of O&M activities would be anticipated for the portals. Routine maintenance and replacement in kind for the closure structure mechanisms would be expected as well as grounds keeping and ornamental tree/shrub replacement as needed.

Table 2.1 Alternative 1 Construction Estimates Summary

Material	Assumed Round Trip Distance	Quantity	Quantity per Load	Truckloads	Total Distance Traveled (mi)
Sheetpile	20 mi	314 tons	20 tons/truck	16	320
Concrete Haul	20 mi	1,024 cubic yds	8 cubic yds/truck	128	2,660
Reinforced Steel	20 mi	22.75 tons	20 tons/truck	3	60
Soil/Rip-Rap Haul	20 mi	7,290 cubic yds	16.5 cubic yds/truck	442	8,840
Paving Materials	20 mi	1,495 cubic yds	6 cubic yds/truck	250	5,000
			One Portal TOTAL:	839	16,880
			Two Portal Assumed Totals:	1,800 truckloads	34,000 miles

Source: USACE, 2003.

2.2.2 Portals and River Landing (Alternative 2)

This alternative would include the features in Alternative 1, in addition to the river landing.

2.2.2.1 River Landing

Upstream of the Market Street Bridge, a stability berm (approximately 900 feet long x 70 feet wide) was constructed in 1999 to stabilize the left descending riverbank prior to placement of additional levee fill. At an elevation of 525 feet above mean sea level (msl), the berm provides an existing foundation well above the typical river elevation onto which the river landing would be constructed. The normal river elevation during the summer is generally about elevation 512, but can vary between elevation 510 and 517. There are various construction methods, equipment, and sequences that a contractor could identify and select to construct these features. This section presents a reasonable construction approach that could be used to construct the subject features. It is identified to present an approach and quantify the environmental impacts thereof, but is not intended to dictate the construction methods, equipment, or sequences. For this evaluation, construction of the rockfill berm expansion was assumed to require staging equipment at the river's edge and manipulating materials in the river. The contractor may choose to utilize a variety of equipment to efficiently perform the work, including a boat and small floating work platforms.

River landing construction would take place over approximately 18 months and would utilize about 2 acres of project property (including material laydown and actual feature construction) within the previously disturbed footprint of levee construction activities. For the duration of the construction activities, sediment control activities would be implemented to minimize the effects of the ongoing work outside the area actively used during construction. This would include the installation of silt fences, temporary rip-rap placement to stabilize slopes susceptible to erosion, and using a street-sweeper to maintain clean road surfaces.

Table 2.2 provides a summary of activities for river landing construction and the total sums the construction activities necessary for all of Alternative 2. Below is a description of the methods and procedures that would be used to construct the various River Landing features (berm extension, stairs, and ramps). Prior to constructing the berm extension, temporary groins would be installed to assist in the construction. These groins, as also described below, would reduce the river velocity and currents within the work area, and thereby, reduce turbidity during excavation and rock placement.

Berm Extension

As part of the river landing, the existing rockfill berm (i.e., shoreline) would be extended farther into the river in order to provide a larger surface area. The larger surface area is necessary to provide adequate space for use during festivals and public events. Considerations were made to examine alternative methods of expanding the surface area. Expanding the river landing landward by cutting the riverbank back was discarded because the change could compromise the levee integrity and undermines the original purpose for constructing the existing stability berm. Downstream expansion is restricted by the Market Street Bridge, and upstream expansion would require the undesirable filling of vegetated shallows and riparian fringe wetlands. Riverward

expansion of the existing stability berm into the river represents the least damaging approach to providing the additional area needed for this feature.

Increasing the width would expand the existing berm surface and toe riverward by approximately 25 feet for a length of approximately 450 feet. The berm expansion would be constructed using the same type of rockfill materials and methods that were used to construct the existing berm and the new berm would be constructed at the same elevation (525 feet msl) as the existing berm. The re-configured shape would provide space that is functional and would be aesthetically pleasing for various aspects of recreational use.

Similar to the design of the original stability berm, a dug toe would also be required to provide scour protection along the toe of the newly expanded berm. The dug toe would require mechanically excavating a small, trapezoidal shaped trench in the riverbed (approximately 5 feet deep by 10 feet wide at the bottom), which would be backfilled with rockfill. The excavated river bottom materials would either be hauled off the site immediately for off-site disposal or would be placed atop the existing stability berm within areas constructed with silt fence and straw bales to de-water the materials. Free water would drain back into the river after suspended solids and sediment had settled.

The rockfill material used to backfill the dug toe and construct the berm expansion would consist of various sizes of hard, durable and sound sandstone, siltstones, and hard shales. The rockfill material would be a well-graded mixture of stone with a maximum weight not exceeding 350 pounds (21-inch) with a minimum weight of at least 3 pounds (3-inch). In addition, not more than 10% by weight of soil and rock fragments passing the 3-inch screen would be permitted within the rockfill material in order to reduce turbidity during placement.

A lower rockfill berm, or something similar, would first be constructed on the existing berm slope and dug toe. It would be constructed to about elevation 515 and be about 15 feet wide to accommodate construction equipment. This lower berm would permit the excavation and backfilling of the new dug toe located directly between the groins. Prior to the placement of any fill, the contractor would survey the existing berm and riverbed and install the appropriate erosion and sediment controls as required.

Groin Construction and Removal

The concept design for construction of the river landing would include building a minimum of 2 rockfill groins at the upstream and downstream limits of the expanded berm. These groins would be constructed perpendicular to the existing berm and would extend slightly beyond the new berm. These groins would reduce the river velocity and currents within the work area, and thereby, reducing turbidity during excavation and rockfill placement. The rockfill material would be very clean and should not create problems with turbidity during placement. Below is the proposed construction sequence for the construction and removal of the temporary groin. The groins would extend into the river approximately 65 to 70 feet beyond the current edge of the existing berm. The groins would have a crest width of 12 to 15 feet with 1 vertical on 1.5 horizontal side slopes and be constructed to about 515 ft msl, or slightly higher. The base width of the groins on the riverbed would be about 60 feet wide. The top of the groins would be about three feet above the typical summer water surface elevation.

Upon completion of the all work on the expanded berm, the groins would be removed by mechanical extraction (likely a large crane). The rockfill material excavated from the groins would be reused and placed in the upper portion of the expanded berm. The bottom-most layer of rockfill would not be removed and would remain on the river bottom. For both groins, approximately 1,200 cubic yards of rockfill materials would likely be retrieved and then reused to construct the upper portion of the expanded berm. Groin construction was assumed to take approximately 2 to 3 weeks.

Stairs, Ramps, and Access

Access to the river landing would be via a wide set of stairs (approximately 60-foot) descending from the riverside access road grade to the river landing. The wide stairs would also function as a seating area for picnicking and general recreation. UFAS-compliant ramps would provide alternate access to the river landing without steps. The Landing would also be accessible from the upstream side of the Market Street Bridge using either a small ramp or a small set of stairs.

Existing subsurface data from borings adjacent to the area indicate that the ramps and stairs can be built using combination of fill, concrete retaining walls and/or steel sheetpiling capped with concrete. For the cost estimate, it was assumed that a portion of the natural riverbank up-slope of the rockfill berm would have to be excavated in order to provide the required space for constructing the walls of the access ramps. This excavation would require some type of shoring system to protect the adjacent features. It was assumed that the shoring system would consist of sheetpiling with tiebacks. Upon completion of the walls for the ramps and stairs, a concrete cap would be installed on the exposed sheetpiling.

Alternatively, it may be possible to build the stairs, ramps, and walls on fill. This fill would be placed on the existing slope and extend approximately 10 to 15 feet onto the existing rockfill berm. A stability analysis was performed (April 1998) to determine the effects from the placement of additional fill on the riverbank slope. The analysis showed that the rockfill berm (that is currently in place) provides the required stability and factors-of-safety. Additional design work would be performed to determine the most cost-effective design for the stairs, ramps, and access, but the cost estimate conservatively assumes excavation and shoring for constructing the walls and ramps. Depending on the amount of disturbance to the existing slopes upstream and downstream of the stairs and ramps, re-grading and slope protection (riprap) may be required. Riprap protection for these slopes was assumed in the estimate.

Along the original riverbank above and adjacent to the berm, existing mature trees and shrubs may need to be removed for the construction, but removal would be avoided where possible. Some of the existing cottonwood trees would be removed to open up visual windows to the adjacent and opposite sides of the river. As a result, the existing slope would need to be armored with riprap. Preliminary estimates indicate that as much as 1,500 cubic yards of rip-rap and 4,000 cubic yards of soil/fill would be excavated in order to build the river landing. Most of this material would be stored within the construction laydown area and held for later use.

Fish Habitat Groins

To minimize impacts to the benthic habitat from construction, the riverward edge of the river landing would be configured in a saw tooth formation (in plan view) rather than straight. The

small groins would extend approximately 6 feet from the toe, be about 3 feet high by 5 feet wide and be at an approximate 25-foot spacing. This configuration would produce a series of alternating current deflectors and eddies that would be attractive to benthic invertebrates, minnows, and predatory fishes.

Operations and Maintenance (O&M)

According to the stage-frequency curve from the draft Engineering Appendix (USACE, 2003), an elevation of 536.75 feet would be inundated once in five years; elevations less than that would be inundated more frequently. Because of the elevation of the river landing (approximately 526-527 feet), the surface, some steps, and ramps would experience regular inundation with floodwaters and the associated sediment/debris deposition when the floodwaters recede. The operations and maintenance plan would address the necessary routine cleaning of debris and sediment. Using flood-resistant construction methods, two water hydrants would be installed within approximately 150 feet of the landing to facilitate cleanup and post flood wash down. Alternatively, water trucks could be used to provide the wash down if detailed design or other factors dictate. Any site furnishings (e.g., trash receptacles, kiosk, or fire hydrant) within the floodway would be removable or of flood resistant design to avoid damage and loss during floods. Signage, flagpoles, and lighting would be designed to withstand periodic inundation and debris impact. Lighting fixtures and circuitries would be water tight with ground fault interruption capability.

Table 2.2 Alternative 2 Construction Estimates Summary

Material	Assumed Round Trip Distance	Quantity	Quantity per Load	Truckloads	Total Distance Traveled (mi)
Sheetpile	20 mi	228 tons	20 tons/truck	12	240
Concrete Haul	20 mi	2,659 cubic yards	8 cubic yds/truck	332	6,640
Reinforced Steel	20 mi	28.75 tons	20 tons/truck	2	40
Soil/Rip-Rap Haul	20 mi	15,271 cubic yards	16.5 cubic yds/truck	926	37,040
Paving Materials	20 mi	1,999 cubic yards	6 cubic yds/truck	333	6,660
			River Landing TOTAL:	1,605	50,620
			River Landing Assumed Totals	1,700	53,000
			Alternative 2 Totals:	3,500 truckloads	87,000 miles

Source: USACE, 2003.

2.2.3 Portals, River Landing, and Fishing Platform/Dock (Alternative 3)

This alternative would include all of the features in Alternative 2, plus the fishing platform/dock and would take approximately 30 months to construct.

2.2.3.1 Fishing Platform/Dock

The dock itself is assumed to be a "T" shaped structure at a fixed elevation with wood decking anchored onto structural sub flooring. The fishing platform/dock would be constructed from land but could have aspects of the construction performed from the water with a boat or via barge. The concept design dock would be founded on approximately ninety concrete-filled steel pipe piles (18-inch) that would be driven approximately 30 feet into the riverbed with a crane-operated vibratory hammer. The dimensions of the dock would be approximately 340 feet long and 12 feet wide. Stairs and an UFAS-compliant ramp from the river landing would provide access to the fishing platform/dock. Because access would be from the river landing, the Fishing platform would be less likely to be constructed as a separate feature unless the river landing was constructed. However, the river landing could be constructed without the fishing platform/dock. Where the fishing platform/dock would attach to the rockfill berm, several piles would have to extend through the rockfill berm. To install these piles, a portion of the rockfill berm and dug-toe would have to be excavated and then reconstructed once the piles have been installed. After the installation of the piles, the construction of the actual fishing platform deck (cross beam, stringers, decking, railings, etc.) could be completed. During the detailed design phase, the type of load conditions (ice, uplift, river velocities, etc) that need to be considered in the design of the fishing platform/dock would be evaluated.

A design alternative for the fishing platform/dock could be a floating dock that would be removed during the winter months in order to avoid being damaged by seasonal debris and ice. The permanent fishing platform/dock was assumed as the basis for the cost estimate as it was the more expensive design, but the removable dock could be utilized based on project and O&M costs and detailed design. The environmental effects from a floating fishing platform/dock would be equivalent to those from a fixed elevation structure.

For the duration of construction activities, sediment control measures would be implemented to minimize the effects of the ongoing work outside the 1-acre area actively used during construction. Measures would include the installation of silt fences, temporary rip-rap placement to stabilize slopes susceptible to erosion, and using a street-sweeper to maintain clean road surfaces.

Operations and Maintenance (O&M)
Because of the elevation of the fishing platform/dock, the surface and ramps would experience regular inundation with floodwaters and the associated sediment/debris deposition when the floodwaters recede. The operations and maintenance plan would address the necessary routine cleaning of debris and sediment. The water hydrants installed at the river landing could be used to facilitate cleanup and post flood wash down. Alternatively, water trucks could be used to provide the wash down if detailed design or other factors dictate. Any site furnishings (e.g., trash receptacles, kiosk, or fire hydrant) within the floodway would be removable or of flood

resistant design to avoid damage and loss during floods. Signage and lighting would be designed to withstand periodic inundation and debris impact.

Table 2.3 Alternative 3 Construction Estimates Summary

Material	Assumed Round Trip Distance	Quantity	Quantity per Load	Truckloads	Total Distance Traveled (mi)
Pipepile	20 mi	176 each	5/truck	36	720
Sheetpile	20 mi	20 tons	20 tons/truck	1	20
Concrete Haul	20 mi	595 cubic yards	8 cubic yds/truck	75	1,500
Reinforced Steel	20 mi	0 tons	20 tons/truck	0	0
Soil/Rip-Rap Haul	20 mi	41 cubic yards	16.5 cubic yds/truck	3	60
Paving Materials	20 mi	0 cubic yards	6 cubic yds/truck	0	0
			Dock TOTAL:	115	2,300
			Dock Assumed Totals	130	2,500
			Alternative 3 Totals:	3,615 truckloads	89,500 miles

Source: USACE, 2003.

2.2.4 Portals, River Landing, Platform/Dock, and Amphitheater (Alternative 4)

This alternative would include the features in Alternative 4, plus the amphitheater and stage and would take approximately 30 months to construct.

2.2.4.1 Amphitheater and Stage

The amphitheater and stage would be constructed just downstream of the Market Street Bridge but upstream of the downstream portal. The amphitheater would consist of approximately 220 large stones (approximately three feet wide by six feet thick by eight feet long) or reinforced concrete blocks (similarly sized) placed into the slope to provide rows of bench seating at approximately 250 feet per row. This layout would be for approximately 750 people.

The construction of the amphitheater would require re-grading the riverside slope of the levee and berm and installing the seating area. In order to partially embed the large stone into the slope, excavation and removal of the riprap, rockfill, and soil materials on the existing levee slope and berm would be required. Additional fill would be used to provide a level surface

behind the stone seats. Access ramps and stairs for the amphitheater would be constructed by placing fill on the slope to create the required grades.

The areas adjacent to the amphitheater, ramps, and stairs are currently protected with riprap. In order to provide a more aesthetically pleasing look to the amphitheater area, the riprap surface could be covered with a layer of fill and topsoil and the entire area seeded. The riprap would still be in-place below the surface to protect the levee slope, but the new grass area would provide lawn areas for additional seating. Quantities and costs for covering the riprap slope with topsoil were included in the cost estimate; however, the detailed design evaluations would determine the final appearance of the slope. The area between the stage and seating would be paved.

The proposed dimension for the stage platform would be about 20 feet by 45 feet; the performance stage would consist of a concrete slab placed on a layer of sub base stone on top of the existing rockfill berm. The top of slab would be set at approximately 528 +/- feet above mean sea level (msl). In order to provide sufficient distance between the amphitheater seating and the performance stage, a portion of the stage would extend riverward beyond the edge of the rockfill berm. This extension would require the construction of a small L-shape retaining wall on the slope of the existing rockfill berm. To construct the retaining wall, a portion of the rockfill berm would be excavated down to the base slab elevation approximately six feet below the top of the existing berm. The L-shape retaining wall would have an approximate base width of 10 feet and stem height of about eight to 10 feet. The foundation slab of the retaining wall would be located several feet of elevation above the normal river level. Final design would ensure that there would be no work performed in the river and there would be no physical disturbance to the existing rockfill slope or habitat near or below the water level.

Even though the performance stage would be approximately 45 feet long, the final design would account for the physical stresses that could occur during flooding. As such, the L-shape retaining wall would extend a sufficient length upstream and downstream of the stage area in order to provide a smooth hydraulic transition for elevated river flow. The total length of wall would be approximately 150 feet. After the construction of the retaining wall, additional drainage stone (2" gravel) and the rockfill from the excavation would be used to rebuild the berm to its original grade and backfill behind the retaining wall. The stage would be constructed directly on the existing rockfill berm and the new retaining wall backfill. The platform for the stage would consist of a 12 to 18-inch thick reinforced concrete slab, constructed on top of a 12 to 18-inch layer of sub base stone.

A railing would be installed on top of the retaining wall for safety purposes. There would be approximately two 10-foot wide ramps leading from the riverside access road to the stage area and 60-foot wide concrete stairs from the riverside access road to the unimproved riverfront adjacent to the downstream portal. Direct electrical power or oversized underground conduits would be provided to pull the necessary electrical wires for seasonal performances. The conduits would be large enough to facilitate pulling wires with plugs and receptacles attached. Electrical cut-off switches would be provided at the levee and the design of these conduits would preclude floodwater backing up and compromising the levee.

Amphitheater and stage construction would take place over approximately 1 acre of project property (including material laydown and actual feature construction) within the previously disturbed footprint of levee construction activities. Prior to building the amphitheater and stage, site preparation would include the clearing of the thin (10-20 feet) fringe of woody shrubs and small trees that have grown through the rip-rap and stone block placed there previously. This could result in the accumulation of approximately 90 cubic yards of chipped material that would be transported from the site for disposal.

For the duration of the construction activities, sediment control measures would be implemented to minimize the effects of the ongoing work outside the 1-acre area actively used during construction. This would include the installation of silt fences, temporary rip-rap placement to stabilize slopes susceptible to erosion, and use of a street-sweeper to maintain clean road surfaces.

Operations and Maintenance (O&M)

According to the stage-frequency curve from the draft Engineering Appendix (USACE, 2003), annual inundation of the stage surface and some of the bench seats would be expected. Removal of sediment and debris after flood events would be expected. In addition, maintenance of the mowed areas would be the responsibility of the sponsor, but would generate a small quantity of organic debris annually. After various festivals or public events were hosted at the facility, the trash and debris (paper cups, etc.) associated with public venues would need removal and would be the responsibility of the sponsor. The operations and maintenance plan would address the necessary grounds maintenance as well as the routine removal of debris and sediment.

Table 2.4 Alternative 4 Construction Estimates Summary

Material	Assumed Round Trip Distance	Quantity	Quantity per Load	Truckloads	Total Distance Traveled (mi)
Concrete Haul	20 mi	298 cubic yards	8 cubic yds/truck	38	760
Reinforced Steel	20 mi	18 tons	20 tons/truck	1	20
Soil/Rip-Rap Haul	20 mi	3,189 cubic yards	16.5 cubic yds/truck	194	3,880
Paving Materials	20 mi	400 cubic yards	6 cubic yds/truck	66	1,320
Quarry Rocks	200 mi	224 each	6 stones/truck	38	7,600
			Amphitheater/Stage TOTAL	337	13,580
			Amphitheater/Stage Assumed Totals	350	15,000
			Alternative 4 Totals:	3,965 truck loads	104,500 miles

Source: USACE, 2003.

2.2.5 Portals, River Landing, and Amphitheater without Fishing Platform/Dock (Alternative 5)

This alternative would include the features in Alternative 5, with the exclusion of the fishing platform/dock and would take approximately 30 months to construct. The aspects of the project that would be constructed for this alternative would be identical to those of Alternative 5, without the actions necessary to construct the fishing platform/dock. As such, there would be 130 fewer truckloads of materials brought to and from the site on public roadways and 2,500 fewer miles of transportation on public roads than would be accomplished under Alternative 4.

2.2.6 No Action (Alternative 6)

The No Action Alternative assumes no action by the Corps of Engineers to implement any type of design modifications or recreational enhancements. The ongoing levee raising activities would continue as described in the Phase I and II General Design Memoranda until completion with no changes or enhancements. No action reflects the predicted conditions based on the continuation of existing economic, social, and environmental conditions and trends within the affected area.

2.3 Actions Common to All Alternatives

Pavement of the riverside access road and the miscellaneous recreational accoutrements are evaluated in the draft SEIS (DSEIS), but are not evaluated as aspects of a formal alternative. These features are evaluated separately as actions to be conducted regardless of the alternative selected (i.e., they would be built under all of the alternatives with the exception of No Action).

2.3.1 Paved Riverside Access Road

Regardless of the action alternative selected for implementation, the paving of the access road at the base of the riverside of the levee would be completed as an element to the riverfront development plan. The paving of this road is an improvement for recreational purposes and would provide a biking/jogging/walking trail along the riverside toe of the project. The reach to be paved would extend from the upstream end behind the Luzerne County Courthouse to the downstream portal.

Paving the access road would take place over approximately three acres of project property (including material laydown and actual road feature construction) within the previously disturbed footprint of levee construction activities. The road would be approximately within its current unpaved alignment and be approximately 15 feet wide for a distance of 3,200 linear feet. The new road surface would have a base course of stone and a bituminous wearing surface. No drainage modification or storm water collection is anticipated and minor re-grading of the adjacent ground surface would facilitate runoff. Tree and shrub removal would not be required as most of the road is already in use with a gravel surface. Downstream of Market Street, rip-rap must be removed from the existing berm prior to laying down the base course. During that

process, approximately 4,000 cubic yards of existing road materials would be dug up and stored on site for later use.

For the duration of the construction, sediment control measures would be implemented to minimize the effects of the ongoing work outside the area actively used during construction. Measures would include the installation of silt fences, temporary rip-rap placement to stabilize slopes susceptible to erosion, and use of a street-sweeper to maintain clean road surfaces.

Table 2.5 Paved Riverside Access Road

Material	Assumed Round Trip Distance	Quantity	Quantity per Load	Truckloads	Total Distance Traveled (mi)
Sheetpile	20 mi	0 tons	20 tons/truck	0	0
Concrete Haul	20 mi	15 cubic yards	8 cubic yds/truck	2	40
Reinforced Steel	20 mi	6.2 tons	20 tons/truck	1	20
Soil/Rip-Rap Haul	20 mi	1,333 cubic yards	16.5 cubic yds/truck	81	1,620
Paving Materials	20 mi	3,850 cubic yards	6 cubic yds/truck	642	12,840
			Road Paving TOTAL:	726	14,520
			Road Paving Assumed Totals:	800 truck loads	16,000 miles

Source: USACE, 2003.

2.3.2 Miscellaneous Recreational Accoutrements

The flood control project, as designed and constructed elsewhere in the Wyoming Valley, includes minor recreational elements, in accordance with the project authorization. This reach of the Wilkes-Barre levee would be completed to include similar recreational features such as: lights, seating areas with benches, trees/vegetation, educational kiosks, and trash receptacles. As a rule of thumb, pole mounted lighting fixtures would be about 18 feet in height using 175 W metal halide bulbs and would be spaced 45 to 60 feet on center. Benches would be spaced at 90 to 120 feet on center and a pair of trash receptacles would be provided for every ½ acre of park space. These site furnishings would include approximately 40 lighting fixtures, 20 trash receptacles, 25-30 benches, and 1-2 informational kiosks. There would be minor trenching for electrical access and excavation for cement footings to permanently anchor the furnishings. New pedestrian ramps to access these recreational features atop the levee would be provided.

2.4 Preferred Alternative

Alternative 4, includes two portals, the river landing, fishing platform/dock, and the amphitheater and stage, at the Wilkes-Barre riverfront. Alternative 4 is selected as the PREFERRED ALTERNATIVE.

2.5 Alternatives Considered but Eliminated from Detailed Analysis

2.5.1 Riverfront Plan Elements Not Eligible for Corps Participation

Evaluation of the Preferred Alternative to determine which elements are within Corps authority to participate in is on going. In addition to the project features discussed previously in this section of the SEIS (portals, river landing, amphitheater and stage, and fishing platform/dock), other interests within the community may construct a parking facility across River Street from the Market Street Bridge, rehabilitate the Sterling Hotel, restore the Irem Temple across River Street from the project levee, and realign the Luzerne County Courthouse Road. These elements do not fall under the authority of the Wyoming Valley Levee Raising Project and are not within the Chief Engineer's discretionary authority to study or implement as part of the levee raising project.

The addition of a historic-themed playground at the downstream end of the River Commons was suggested by residents during the public scoping process for the Supplemental Environmental Impact Statement. Both the Corps and the local sponsor support the concept of including an interactive, historic-themed playground that highlights the history of the area where both Fort Wyoming and Wilkes-Barre Fort were most likely located. However, because the proposed playground would not be on project lands associated with the levee raising project, Corps regulations do not permit cost-sharing in the playground construction.

2.5.2 Conceptual Designs Considered and Discarded

The original concept design for the amphitheater and stage would have resulted in the stage being cantilevered over the water's edge. Construction for that design would have required establishing a large work area within the river by building rock groins into the water. This concept design and approach was evaluated and discarded to eliminate in-water construction for the stage and to avoid temporary or permanent effects to the river, submerged aquatic vegetation, or wetland fringe at the water's edge. Moving the stage landward (away from the river's edge) approximately 15 – 20 feet and developing a different approach to construction precludes the aforementioned potential effects.

3 Affected Environment

3.1 General

Generally, the resources within the study area have not significantly changed since the original 1981 GDM/EIS and the subsequent 1996 GDM/SEIS. Therefore, the emphasis of the following sections will be on those existing resources that have changed or require an update because of changes. Existing conditions that have remained substantially the same will receive only a brief description of the existing resources. The 1981 GDM/EIS (USACE, 1981), 1996 GDM/SEIS (USACE, 1996), and the supporting appendices are the basis of the detailed information incorporated by reference.

3.2 Physical Resources

3.2.1 Topography

Flanked on both sides by moderately steep mountains, the Wyoming Valley is a broad slightly rolling plain with the Susquehanna River at the base. The Susquehanna River flows southeast through high, flat-topped plateaus separated by steep-sided valleys. Midway, the Lackawanna River joins before the Susquehanna River turns and flows southwest through Wilkes-Barre towards Sunbury, Pennsylvania. The terrain in the southern portion of the middle Susquehanna sub-basin consists of northeast-southwest trending ridges and valleys.

3.2.2 Geology

The ancestral Susquehanna River Valley was deepened by glaciations during Pleistocene time, but when the glacier receded, the valley was filled with clay, silt, sand, gravel, cobble, and boulders carried by the glacial melt water runoff. In general, bedrock in the area of the site is shallow on the western band of the Susquehanna River and drops off sharply as it crosses the river. Exposed bedrock is found along the steep mountains on either side of the river, while in the valley and river flood plain depth to bedrock can be as high as 300 feet (LCFPA, 2000). Beneath the existing levee alignment in Wilkes-Barre, test borings at each planned portal location were conducted in order to evaluate subsurface conditions and make preliminary geotechnical recommendations for design. The investigation indicated glacial deposits approximately 80-100 feet thick of silts, sands, and gravels over bedrock consisting of siltstone and sandstone.

Site-specific drilling for detailed geological characterization resulted in boreholes being drilled where features would be constructed to develop specific information for the detailed design.

3.2.3 Mineral

The bedrock within the Wyoming Valley consists of, from oldest to most recent, the Catskill Formation of Devonian Period, the Pocono Formation of Mississippian Period, the Mauch Chunk

Formation of Mississippian, and in part, possibly of Pennsylvanian Period, and the Pottsville Formation of Pennsylvanian Period. The economically important coal beds of the Northern Anthracite Fields are contained in the Llewellyn Formation that was formed during the Pennsylvanian Period (USACE, 1996).

3.2.4 Climate

The mountains surrounding the Wyoming Valley protect the area from high winds, and influence the temperature and precipitation in both summer and winter. The climate is relatively cool in the summer with frequent showers and thunderstorms. Winters are generally not severe; subzero temperatures and severe snowstorms are not frequent. A high percentage of winter precipitation occurs as rain. The average annual temperature is about 50 degrees Fahrenheit. The coldest months are January and February with an average temperature of about 27 degrees and the warmest is July with an average monthly temperature of about 72 degrees. The average annual precipitation is approximately 39 inches. The months with heaviest average precipitation are January and February. Average annual snowfall is approximately 43 inches (USACE, 1996).

3.2.5 Water Quality

The middle Susquehanna River sub-basin is a mixture of urban and rural lands that include forest, agriculture, abandoned mines, and cities (including Wilkes-Barre). A section of this sub-basin was heavily mined and remnants of the industry, such as coal slag piles, abandoned mines, and acid mine drainage (AMD) still impact the water quality of many miles of streams and rivers throughout the Wyoming Valley (SRBC, 2002). The Environmental Protection Agency's (EPA) lists this reach of the Susquehanna River (through Wilkes-Barre) as an impaired water because of high metals due to AMD (USEPA, 2003).

Recent sampling and analysis reported by the Susquehanna River Basin Commission (SRBC, 2002) confirms the water quality of the middle Susquehanna River is similar to the water quality measured approximately 10 years ago (SRBC, 1997). Sampling results indicated the primary source of severe impairment was acid mine drainage. Urban influence was another source of impairment, while agricultural impairment was not significant (SRBC, 2002).

The urban influence in the area of Wilkes-Barre is substantially affected by combined sewer systems. In combined sewer systems, untreated sanitary flow is combined with storm water during wet weather events, leading to untreated combined sewer overflows (CSOs) that discharge into natural streams and rivers. Combined sewer overflows contain pollutants that are present in the domestic and industrial wastewaters, as well as those in the urban stormwater runoff. If the municipal sewer collects both storm runoff and wastewater, or is subject to extreme inflow and infiltration, the combined storm and sanitary flows can exceed the capacity of the diversion facility and overflow. In this situation, the combined sewer overflows discharge through an outfall pipe directly into the Susquehanna River or a tributary to the river. There are currently 11 combination stormwater/sanitary sewer diversions located within Wilkes-Barre and more than 20 others within nine river miles upstream of the project area (LCFPA, 2000).

CSO discharges occurring during a localized or regional storm in the Wyoming and Lackawanna Valleys create an increase in the organic loading; coliform, fecal coliform and pathogenic

microorganism counts; nitrogen and phosphorus loading; and a temporary deficit of dissolved oxygen (DO). The Pennsylvania Department of Health (PADOH) has established fecal coliform standards for primary contact recreation such as swimming. Fecal coliform measurements were obtained from EPA's STORET database for the water quality station located 12.5 miles downstream of Wilkes-Barre from 1962 to 1998 (LCFPA, 2000). The data suggest that fecal coliform levels have exceeded the PADOH standard on several occasions although exceeding the standard has become less frequent and severe since the mid-1980s (LCFPA, 2000). According to the PADOH standards for primary contact recreation, the current water quality would prohibit swimming in the river within the project area.

For prior work on the levee raising in the Wilkes-Barre area, a National Pollution Discharge Elimination System (NPDES) Permit was issued to the Luzerne County Flood Protection Authority (PADEP, 1999). This permit provided coverage under the NPDES general permit for discharges of stormwater associated with construction activities and includes an approved erosion and sediment control plan (Luzerne Conservation District, 1999).

3.2.6 Soils

Within the existing levee systems, soils consist of three general foundation overburden zones. The uppermost stratum is comprised of a semi-impervious layer of silt and sand with some gravel and fill materials containing cinders, ash, wood, brick, and broken glass (USACE, 1996).

Within NEPA evaluations, the Corps must consider the protection of the nations' significant/important agricultural lands from irreversible conversion to uses that result in their loss as an environmental or essential food production resource. The Farmland Protection Policy Act (FPPA), 7 USC 4201 et seq., and the U.S. Department of Agriculture's (USDA) implementing procedures (7 CFR Part 658) require Federal agencies to evaluate the adverse effects of their actions on prime and unique farmland, including farmland of statewide and local importance. The project does not involve conversion of, or otherwise affect, prime, unique, or important U.S. farmland.

3.2.7 Hydrology and Hydraulics

The Susquehanna River is the primary waterway in the region and enters the Wyoming Valley from the northwest through a gap in the mountains north of Pittston. The significant tributaries entering the basin in the Wyoming Valley are the Lackawanna River, Mill Creek, Toby Creek, and Solomon Creek. A U.S. Geological Survey (USGS) stream flow monitoring station (#01536500) is located on the Susquehanna River at Wilkes-Barre on the downstream side of the North Street Bridge. This monitoring station has been in service since 1899 (station was moved 700 feet upstream in 1997) and represents an excellent source of data. Upriver from the station, the watershed's drainage area is approximately 9,960 square miles (LCFPA, 2000). The hydrologic conditions in the area of Wilkes-Barre are well documented (USACE, 1981 and 1996; LCFPA, 2000).

3.2.8 Air Quality

The EPA Office of Air Quality Planning and Standards has set National Ambient Air Quality Standards for six principal pollutants, called "criteria" pollutants. They include carbon monoxide, nitrogen dioxide, ozone, lead, particulates, and sulfur dioxide. For Luzerne County, the only parameter not attaining the air quality standard is the ozone standard (USEPA, 2002). Areas that are designated in nonattainment of the ozone standard are further classified, in order of increasing severity, as Incomplete Data, Marginal, Moderate, Serious, Severe, and Extreme; the designation for Luzerne County is Marginal (PADEP, 2002). Luzerne County is further sub-classified as an ozone transport region.

Ozone is a gas that forms in the atmosphere when three atoms of oxygen are combined (0_3). It is not emitted directly into the air, but at ground level is created by a chemical reaction between oxides of nitrogen (NO_x), and volatile organic compounds (VOC) in the presence of sunlight.

Motor vehicle exhaust and industrial emissions, gasoline vapors, and chemical solvents are some of the major sources of NO_x and VOC, also known as ozone precursors. Strong sunlight and hot weather cause ground-level ozone to form in harmful concentrations in the air. Many urban areas tend to have high levels of ozone, but other areas are also subject to high ozone levels as winds carry NO_x emissions hundreds of miles away from their original sources. This is why Luzerne County is considered an ozone transport region.

3.3 Biological Resources

3.3.1 Vegetation

The site is a highly modified, urban, riparian corridor approximately 200 to 400 feet in width, including a range of typical northeastern Pennsylvania floral components arrayed along hydrologic and disturbance gradients. The effects of the hydrological gradient are demonstrated perpendicular to the river, as the rapid elevation change of the north-facing slope affects the frequency of flooding and soil saturation. The disturbance gradient has occurred randomly, creating a pattern of successional age classes ranging from maintained herbaceous stands less than five years since disturbance, to strips of mature trees upriver from the Market Street Bridge that are aged more than 70 years.

The lower riverine terrace has recently (within the previous 5 to 20 years) been stabilized by placement of a rip-rap blanket composed of tightly packed stone in the 2 to 4-foot diameter class at the water's edge. The older sections have been fully infested by opportunistic riparian trees and shrubs, presently in the three to 6-inch diameter classes. These dense stands are primarily comprised of a silver maple (*Acer saccharinum*), box-elder (*Acer negundo*) and sycamore (*Platanus occidentalis*). Lower, wetter portions of this stand support alder (*Alnus serrulata*), green ash (*Fraxinus occidentalis*) and American elm (*Ulmus americana*). These are replaced higher on the slope by ninebark (*Physocarpus opulifolius*), river birch (*Betula nigra*) and smooth sumac (*Rumex glabra*). Newer sections of the rip-rap terrace, while mostly bare rock, are

beginning to support herbaceous and woody pioneer species. Habitat types noted in addition to the foregoing stands include:

- An approximately 100 foot wide by 200 foot long relic stand of mature sycamore, silver maple and elm stand, located in a well-drained location high on the river bank.

- Several acres of low to mid-successional, frequently to annually mowed/maintained, ruderal vegetation, composed (depending on shallow spring presence) of mostly non-wetland species groups. Species noted were dominated by invasive, weedy, non-native species including Japanese knotweed (*Polygonum cuspidatum*), common red fescue (*Festuca rubra*), purple nightshade (*Solanum dulcamara*), crown-vetch (*Coronilla varia*), garlic mustard (*Alliaria officinalis*). Also observed was jewel-weed (*Impatiens capensis*).

3.3.2 Wetlands

Downstream of the Market Street Bridge, there is a narrow (10-30 feet wide) fringe of rooted aquatic plants within the shoreline shallows. Plants found in this aquatic community are comprised of water-willow (*Justicia americana*), water-smartweed (*Polygonum coccineum*), waterweed (*Elodea canadensis*), water-milfoil (*Myriophyllum herterophyllum*) and spike rush (*Eleocharis* spp.). This wetland type occurs along about 50 percent of the permanently inundated, shoreline shallows. This area would cumulatively add up to approximately one-half to one acre of rooted aquatic wetland community.

Landward of the rooted aquatic wetland community, there is an approximately 10-20 foot wide, 2-5-year aged, band of shrub fringe, along the riverfront downstream of the Market Street Bridge. This vegetation has grown up through the rip-rap and stone block placed there during the existing flood protection construction. Routine cutting of this shrub fringe is part of the O&M plan for the flood protection in Wilkes-Barre. This fringe is composed of alder and black willow (*Salix nigra*) seedlings and saplings, with a major weedy herbaceous component of reed-grass (*Phalaris arundinaceae*) and loosestrife (*Lythrum salicaria*). This shrub-scrub fringe wetland is approximately one acre of habitat.

There are no wetlands, shrub fringe, or vegetated shallows immediately upstream of the Market Street Bridge where work for the river landing and fishing platform/dock would be performed.

3.3.3 Fish and Wildlife

The fish and wildlife of the Susquehanna River and riparian corridor have been characterized and well documented by the Corps of Engineers (USACE, 1981; USACE, 1995; USACE, 2001; USACE, 2002) Luzerne County Flood Protection Authority (LCFPA, 2000), and other organizations such as the Greater Wyoming Valley Audubon Society (Wasilewski, 2002). The results of these prior investigations are incorporated by reference.

Within the specific area being considered for development of the proposed action, downstream of the Market Street Bridge there is only a narrow habitat fringe as described in Section 3.3.1

above. The steep slope and maintenance needs of the areas within the levee prohibit woody vegetation growth and they are therefore maintained grasses. Consequently, the levee areas provide limited wildlife habitat. Although the woody fringe provides marginal to poor cover and roosting area for foraging and resting avifauna, the habitat is too narrow and in too close proximity to human disturbance to be utilized by wildlife other than most tolerant of human activity (e.g., raccoon, *Procyon lotor*).

Upstream of the Market Street Bridge, the grade of slope at the toe of the existing stabilization berm makes an abrupt transition from the berm to open water with no habitat for concern. The upland transition from the berm to uplands features an approximately 100 foot wide by 200 foot long relic stand of mature sycamore, silver maple and elm stand high on the river bank. This provides habitat for a number of small mammals (e.g., Eastern chipmunk, *Tamias striatus*), but does not represent any unique or special habitat by virtue of the species makeup or the size of the stand.

The Pennsylvania Fish and Boat Commission has issued warnings regarding the consumption of fish taken from the Susquehanna River in the project area (PAFBC, 2003). Specifically, anglers are cautioned regarding smallmouth bass (two meals/month); channel catfish, quillback/carp, and walleye (one meal/month); and suckers (eat none). These limits are imposed because of elevated levels of mercury (smallmouth bass) and PCBs (all others).

3.3.4 Threatened and Endangered Species

A recent Environmental Assessment (USACE, 2001) updated the status of threatened and endangered species within the Wyoming Valley. Specifically, the EA included correspondence with the Department of the Interior's U.S. Fish and Wildlife Service confirming that with the exception of an occasional transient individual, there are no rare, threatened, or endangered species in or surrounding the project area. This previous evaluation and determination are herein incorporated by reference.

Additional coordination will be ongoing with the appropriate resource agencies through the completion of this SEIS process to confirm that there have been no changes.

3.4 Hazardous, Toxic, and Radioactive Waste

For each stage of the Wyoming Valley Levee Raising evaluations (Phase I GDM/EIS and Phase II GDM/SEIS), detailed evaluations of the flood protection alignment and construction rights of way for hazardous, toxic, and radioactive wastes (HTRW) have been performed. These documents characterize the project area for HTRW concerns and identify no likely sources of HTRW that could affect any of the alternatives. These evaluations are incorporate by reference (USACE, 1981; USACE, 1995; USACE, 1996).

3.5 Cultural Resources

In accordance with Section 106 of the National Historic Preservation Act of 1966, the Corps of Engineers conducted Phase I and Phase II archeological and architectural surveys of the Wyoming Valley Levee Raising Project between 1980 and 1991. Appendix C- "Cultural Resources" of the 1996 GDM/SEIS provided a detailed description of the investigation methods, findings, and recommendations; those evaluations are incorporated by reference (USACE, 1981; USACE, 1995; USACE, 1996).

The Phase I and Phase II evaluations in the Wyoming Valley were conducted to identify the possible impacts resulting from proposed levee raising activities. Of the structures deemed historically significant, only two are within Wilkes-Barre. Both the Luzerne County Courthouse and the associated River Street Historic District (including the River Commons) are listed on the National Register of Historic Places (LCFPA, 2000).

Established in the 18th Century as the central locale for the town, the River Commons is the area where both Fort Wyoming and Wilkes-Barre Fort were most likely located. The River Commons is located across the street from the urban campuses of both Wilkes University and Kings College, and located across the street from many of the significant structures that are contributing architectural elements to the River Street Historic District (USACE, 2002).

3.6 Recreational Resources

The River Common Park in downtown Wilkes-Barre is on the landward side of the levee. The Park is located between the levee and River Street and is approximately 3,200 feet long. The Park has formal manicured flowerbeds, walking paths, and seating areas. River Common Park is an element of the River Street Historic District, which is included in the National Register of Historic Places. Access to the riverside of the levee from the park is limited to a set of stairs in the center of the park and two sets of stairs on either side of the Market Street Bridge. Primary use of the park is for bicycling, walking, or jogging.

During 2002, local officials and planners surveyed the current recreation use along the Wilkes-Barre riverfront. Based on the results of the surveying, visitation to the area is very low because access is limited and recreation features are not present. However, walking and jogging outside of the Riverfront Common Park along a gravel and dirt road at the base of the river side of the levee was observed. In addition, the top of the levee attracts some sightseers eager to gain the view from above.

Visitors to nearby special events typically overflow into the Riverfront Park. For example, many Fourth of July fireworks viewers watch the Kirby Park fireworks from the Wilkes-Barre side of the river and picnic on the river side of the levee for the event.

There is little information about current usage of the Riverfront Park site by multi-destination users. For the primary users (university students and staff, downtown workers, Wilkes-

Barre/Kingston residents, and hotel guests), current annual visitation to the riverfront was estimated at 10,546 visitors.

3.7 Aesthetic Resources

The following summary has been incorporated from a 2001 Environmental Assessment (USACE, 2001). The Upper-Susquehanna River Watershed is listed as an American Heritage River per Executive Order 13061 on 11 September 1997. The Upper Susquehanna-Lackawanna Watershed, as delineated by the U.S. Geological Survey, comprises nearly 1,800 square miles of land and almost 1,600 miles of perennial rivers and streams. Lackawanna and Luzerne counties constitute the core of the watershed, which includes portions of several other counties and more than 150 municipalities. The corridor begins along the Lackawanna at Thompson, proceeds to the confluence of the Lackawanna with the Susquehanna at Pittston, and follows the Susquehanna through the Wyoming Valley to Sunbury. The watershed includes the Wyoming and Lackawanna Valleys, plus adjoining mountainous areas that provide headwaters for the numerous streams that flow to the Susquehanna. Its major urban centers are Wilkes-Barre and Scranton. Other population centers within the watershed include Bloomsburg, Carbondale, Dickson City, Dunmore, Hazleton, Kingston, Nanticoke, and Pittston.

The landscape within the proposed project area may be characterized as urban where human elements are prevalent and significant landscape modifications exist. Highway and local travelers crossing or coming into proximity with the project area are considered to have moderate visual sensitivity because of the obscured views of the river with the levee as it exists. Residential and recreational viewers, as well as viewers congregating in public gathering places, are considered to have high visual sensitivity, but the quality of the viewscape from Wilkes-Barre and the River Commons was greatly diminished when the original levee was constructed and the levee raising was implemented.

3.8 Flood Protection, Public Safety, and Protection of Children

For each stage of the Wyoming Valley Levee Raising evaluations (Phase I GDM/EIS and Phase II GDM/SEIS), detailed evaluations of the flood protection to ensure public safety have been performed. These documents fully characterize the project area for flood protection, public safety, and protection of children concerns, and are incorporated by reference (USACE, 1981; USACE, 1995; USACE, 1996).

3.9 Socioeconomics

3.9.1 Land Use

The study area for the entire Wyoming Valley Levee Raising Project includes portions of the two Susquehanna River subbasins: the Middle Susquehanna River Basin on the left descending bank and the West Branch Susquehanna River subbasin on the right descending bank. The major population center in the subbasin is along what is known as the Wyoming Valley area, from Carbondale in the north along the Lackawanna River to Nanticoke in the south along the

Susquehanna River. The cities of Scranton and Wilkes-Barre are located in this highly urbanized region. Figure 7 shows the predominant land use/land cover pattern in the vicinity of Wilkes-Barre. Mixed urban, residential, commercial and industrial areas are generally situated adjacent to the river; the land use in proximity to the proposed project is mixed urban and residential.

3.9.2 Population

The 2000 Census (U.S. Bureau of the Census, 2000) reports a Luzerne County population of 319,250 persons, representing a population decrease of 2.7 percent since 1990. The population density of Luzerne County is moderate with approximately 360 persons per square mile. The 2000 population of Wilkes-Barre was 43,123; the city's population decreased 9.3 percent during the 1990s. As shown in Table 3.1, other communities near the Wilkes-Barre experienced similar decreases in population during the 1990s.

The ethnic mix of residents was 92.3 percent Caucasian, 5.1 percent African American, 1.6 percent Hispanic, and 0.8 percent Asian. The most recent Poverty Status figures (1999) estimated that 12.1 percent of families within the City of Wilkes-Barre were considered below the poverty level (U.S. Bureau of the Census, 2000).

Table 3.1 Population Changes

	Census Population			
Community	**1980**	**1990**	**2000**	**% change 1990-2000**
Edwardsville Borough	5,729	5,399	4,984	-7.7%
Exeter Borough	5,493	5,691	5,955	4.6%
Forty-Fort Borough	5,589	5,049	4,579	-9.3%
Hanover Township	12,601	12,050	11,488	-4.7%
Kingston Borough	15,681	14,507	13,855	-4.5%
City of Nanticoke	13,044	12,264	10,955	-10.7%
Plymouth Borough	7,605	7,134	6,507	-8.8%
Swoyersville Borough	5,795	5,630	5,157	-8.4%
City of Wilkes-Barre	51,681	47,523	43,123	-9.3%
Total	**123,218**	**115,250**	**108,603**	**-5.8%**

3.9.3 Transportation

The study area is less than 200 miles from several large East Coast metropolitan areas, including New York, Philadelphia, and Baltimore. Interstate Highway 81 and the northeast extension of the Pennsylvania Turnpike interconnect with nearby interstates 80, 84 and 380. Scheduled passenger and cargo airlines serve the Wilkes-Barre International Airport, which is jointly run by Luzerne and Lackawanna counties. The airport also has a port of entry established by the United States Customs Service in 1975. A foreign trade zone adjacent to the airport was approved in 1976. Two Class I railroads serve the area: Conrail and the Delaware and Hudson. An interline

feeder serves both Class I railroads through the Pocono Northeast Railways (PNER) which allows rail shippers to negotiate favorable rates and service.

Section 10 of the Rivers and Harbors Act (33 U.S.C. 401 *et seq.*) requires authorization from the U.S. Army Corps of Engineers for the construction of any structure in or over any navigable water of the United States, the excavation/dredging or deposition of material in these waters or any obstruction or alteration in a "navigable water". Navigable waters of the U.S. include waters that (1) are subject to the ebb and flow of the tide shoreward to the mean high water mark and/or (2) are presently used, or have been used in the past, or are likely for future use to transport interstate or foreign commerce. The Corps of Engineers has established that the Susquehanna River is a "navigable water" from the mouth, upstream through the project area, to Athens, Pennsylvania near the New York border.

The Pennsylvania Department of Transportation maintains records of average daily traffic counts on their Internet page (PADOT, 2000). The most current volumes shown in black are 2000 annual average daily traffic estimate numbers; the smaller numbers in red are peak hourly traffic count estimates. Baseline traffic numbers for River Street upstream and downstream from the Market Street Bridge are 16,000 and 20,000 vehicles per day as shown in Figure 8. Peak hourly traffic is assumed to be 15 percent of the average daily traffic number (16,000 x .15 = 2,400 vehicles) and (20,000 x .15 = 3,000). Market Street represents the busiest local road in proximity to the project site and therefore presents a good indicator for traffic effects analysis.

3.9.4 Utilities

For the Wyoming Valley Levee Raising Project (Phase I GDM/EIS and Phase II GDM/SEIS), evaluations of the flood protection alignment and construction rights of way for utility access and rights-of-way have been performed. These documents adequately characterize the project area for utility concerns those evaluations are incorporated by reference (USACE, 1981; USACE, 1995; USACE, 1996).

3.9.5 Employment and Income

The coal mining and steel manufacturing industries that traditionally dominated Pennsylvania's economy have both experienced dramatic declines in the last 60 years. As in much of the nation, employment in mining, construction and manufacturing have all declined in the Commonwealth, while service industries have simultaneously strengthened. According to the 2000 Census (U.S. Bureau of the Census, 2000) dominant industries within the City of Wilkes-Barre are educational, health, and social services (23.6 percent); retail trade (13.9 percent); and manufacturing (12.8 percent).

The 2000 Census reports that unemployment in the Scranton/Wilkes-Barre area has decreased since 1990. In 1990, the unemployment rate was 6.9 percent. The 2000 unemployment rate was 5.6 percent with a civilian labor force of 299,308 persons, and 282,576 of those employed. The 1999 per capita income of the Scranton-Wilkes Barre area is $18,229, or 84 percent of the per capita income for the United States ($21,587).

3.9.6 Education

The 2000 Census reported that there were 150,762 students enrolled in preschool through college in the Scranton-Wilkes Barre region. Approximately one-fourth of those students (36,077) were college or graduate school students. Both King's College and Wilkes University are located in downtown Wilkes-Barre and attract students from throughout the nation and abroad. King's College is a private Catholic college with 2,200 students and a 15:1 student to instructor ratio. The college was founded more than 50 years ago by the priests and brothers from the University of Notre Dame, and is part of a nationwide network of Holy Cross colleges and universities. The urban campus of King's College encompasses over 33 acres. Wilkes University has 3,697 students enrolled and a 15:1 student to instructor ratio. Wilkes began as a junior college for Bucknell University in 1933. Wilkes College was instituted in 1947 and became Wilkes University in 1990. The university is within a 27-acre campus in Wilkes-Barre.

Luzerne County is served by eleven public school districts. Almost 18 percent of the county population is enrolled in elementary through high school and 81 percent of the population age 25 or over has attained at least a high school education. Approximately 16 percent of the county population age 25 or over has a bachelor's degree or higher.

3.9.7 Major Damage Centers

For the Wyoming Valley Levee Raising Project (Phase I GDM/EIS and Phase II GDM/SEIS), evaluations of the major damage centers along the flood protection alignment were performed. These documents adequately characterize the project and those evaluations are incorporated by reference (USACE, 1981; USACE, 1995; USACE, 1996).

3.9.8 Public Facilities

For the Wyoming Valley Levee Raising project (Phase I GDM/EIS and Phase II GDM/SEIS), evaluations of the public facilities along the flood protection alignment were performed. These documents adequately characterize the project and those evaluations are incorporated by reference (USACE, 1981; USACE, 1995; USACE, 1996).

3.10 Noise

Noise affects on the public in an urban setting such as Wilkes-Barre are dominated by transportation sources such as busses, delivery and construction trucks, private vehicles, and emergency vehicles. Noise from occasional commercial aircraft crossing at high altitudes is indistinguishable from the natural background noise of the city. Noise ranging from about 10 dBA (A-weighted sound level measured in decibels) for the rustling of leaves to as much as 115 dBA (the upper limit for unprotected hearing exposure established by the Occupational Safety and Health Administration) are common in areas where there are sources of industrial operations, construction activities, and vehicular traffic.

The project area is within an urban setting where ongoing construction activities (heavy equipment operation, truck traffic, etc.) have been occurring intermittently for approximately two years to complete the ongoing levee raising. Noise derived from vehicle noise and construction is generally intermittent and highly variable depending on the time of day and year.

In addition to the ongoing construction-related noise, noise levels characteristic of the urban context are present. The primary sources of noise within the project area include: everyday vehicular traffic along River Street and the Market Street Bridge and other nearby roadways (typically between 50 and 60 dBA at 100 feet); construction activities related to the ongoing Wyoming Valley Levee Raising Project (typically between 80 and 100 dBA at 50 feet); and maintenance of roadways, bridges, and the other structures located adjacent to the River Commons (typically between 80 and 100 dBA at 50 feet). No major industrial facilities are within the project area.

The US Federal Transit Administration (FTA) has established noise impact criteria founded on well-documented research on community reaction to noise based on change in noise exposure using a sliding scale (USFTA, 1995). The FTA Noise Impact Criteria groups noise sensitive land uses into the following three categories:

- Category 1: Buildings or parks where quiet is an essential element of their purpose,
- Category 2: Residences and buildings where people normally sleep (e.g., residences, hospitals, and hotels with high nighttime sensitivity), and
- Category 3: Institutional buildings with primarily daytime and evening use (e.g., schools, libraries, and churches).

Properties adjacent to the project area do not include any Category 1 properties, but there are Category 2 properties (residential areas across River Street) and Category 3 properties (Kings College and Wilkes College on River Street) across River Street from the River Common Park.

The Susquehanna River is not suitable for major navigation in the project area and thus noise from barges and other commercial vessels does not affect Wilkes-Barre.

3.11 Environmental Justice

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Population and Low-Income Populations* (Executive Order, 1994), directs federal agencies to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority population and low-income populations. When conducting NEPA evaluations, the Corps incorporates environmental justice considerations into both the technical analyses and the public involvement in accordance with EPA and Council on Environmental Quality guidance (CEQ, 1997).

The CEQ guidance defines "minority" as individual(s) who are members of the following population groups: American Indian or Alaskan native, Asian or Pacific Islander, Black, not of Hispanic origin, and Hispanic (CEQ, 1997). The Council defines these groups as minority populations when either the minority population of the affected area exceeds 50 percent or the percentage of minority population in the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographical analysis.

Low-income populations are identified using statistical poverty thresholds from the Bureau of the Census Current Population Reports, Series P-60 on Income and Poverty (U. S. Bureau of the Census, 2000). In identifying low income populations, a community may be considered either as a group of individuals living in geographic proximity to one another, or a set of individuals (such as migrant workers or Native Americans), where either type of group experiences common conditions of environmental exposure or effect. The threshold for the 2000 census was an income of $17,761 for a family of four (U.S. Bureau of the Census, 2000a). This threshold is a weighted average based on family size and ages of the family members.

4 Environmental Consequences

4.1 Methodology

The CEQ NEPA-implementing regulations describe the significance of environmental effects requiring the consideration of two factors: context and intensity (40 CFR 1508.27). Context means that the significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality. Significance varies with the setting of the proposed action. For instance, in the case of a site-specific action, significance would usually depend upon the effects in the locale rather than in the world as a whole. Both short- and long-term effects are relevant. Intensity refers to the severity of impact.

Section 4 describes the potential effects from project-related activities on the physical resources, biological resources, HTRW, cultural resources, recreational resources, aesthetic resources, flood protection and public safety, socioeconomics, noise, environmental justice, and the cumulative effects of implementing the proposed action and/or alternatives. The estimated effects are quantified where possible and otherwise described qualitatively within a range of no impact to either potentially adverse or potentially beneficial. The significance of each change in impact is also described based on the magnitude of change resulting from the proposed action and the importance of the resource. To ensure that small potential effects are not over-analyzed, analysts have assessed potential impacts in a level of detail that is commensurate with their potential significance.

4.2 Physical Resources

4.2.1 Topography

Implementing any of the Alternatives (1-5) or the actions that would be performed regardless of what alternative is chosen (paving the access road and miscellaneous accoutrements) would result in permanent minor, re-grading to a previously disturbed landscape. Regardless of the alternative implemented, there would be no significant impacts to the topography.

4.2.2 Geology

Implementing any of the Alternatives (1-5) or the actions that would be performed regardless of what alternative is chosen (paving the access road and miscellaneous recreational accoutrements) would result in minor, local modifications to a previously disturbed landscape. Regardless of the alternative implemented, there would be no impacts to the geology.

4.2.3 Mineral

Implementing any of the Alternatives (1-5) or the actions that would be performed regardless of what alternative is chosen (pavement of the access road and miscellaneous recreational accoutrements) would result in minor, local modifications to a previously disturbed landscape. Regardless of the alternative implemented, there would be no impacts to the mineral resources of the area.

4.2.4 Climate

Implementation of any of the Alternatives (1-5) or the actions that would be performed regardless of what alternative is chosen (pavement of the access road and miscellaneous recreational accoutrements) would result in no discernable impacts to the regional or global climate.

4.2.5 Water Quality

Table 4.1 summarizes the predicted impacts to water quality for each of the alternatives. For alternatives with the potential to affect water quality, affects are expected to be minor, temporary, and localized. For prior work on the levee raising in the Wilkes-Barre area, a National Pollution Discharge Elimination System (NPDES) Permit was issued to the Luzerne County Flood Protection Authority (PADEP, 1999). This permit provided coverage under the NPDES general permit for discharges of stormwater associated with construction activities and includes an approved erosion and sediment control plan (Luzerne Conservation District, 1999). If the proposed action proceeds to design and construction, the NPDES permit would be formally amended according to the selected plan. The LCFPA would continue to hold the permit and selected contractors would be identified as co-permitees for the duration of the construction process.

A Clean Water Act Section 404(b)(1) evaluation has been developed for this project and is included as Appendix D. In addition, the Section 401 State Water Quality Certificate will be included in the Final SEIS after being issued by PADEP.

Minimization of impacts to water quality during construction is important as earth-moving activities disturb soils and can create water quality effects during the construction process. Adherence to the requirements of the NPDES permit's best management practices and erosion and sediment control plan by the construction contractor should minimize the risk of unintentional water quality effects.

After a flood event, operation and maintenance activities to clean up deposited river sediments and debris from the recreational features could result in the introduction of rinse water and re-mobilized sediment back into the Susquehanna River. This re-introduction of sediment to the river is not expected to result in any significant effects to the water quality of the Susquehanna River, as these materials originated in the river. During the cleanup process, rinsing sediments back into the river could produce a localized and temporary increase in suspended sediments and turbidity during the wash process. Because flooding conditions are known to cause raw sewage from the combined sewer overflows (CSOs) within Wilkes-Barre, it would be reasonable to assume that disinfection could be required after a flood event.

If necessary, the recreational features could be disinfected with a three-step process as follows: 1) mechanically remove bulk sediments depending on the volume and practicality of using appropriate equipment, 2) power wash the area to remove the remaining hard deposits, and 3) apply an EPA-approved, non-toxic, disinfecting compound as the manufacturer specifies (e.g., Safe See by Starbright). Alternatively, a light biodegradable soap solution could accomplish the same goal as long as the area was free of all deposits. The specifics of the O&M steps necessary to ensure safe clean up after flooding events would be coordinated closely with the Corps, Sponsor, and PADEP.

4.2.6 Soils

Table 4.2 summarizes the predicted impacts to soils for each of the alternatives. Ongoing coordination with the Natural Resource Conservation Service is expected to formally confirm that no prime or unique farmlands are located within the proposed project area.

An erosion and sediment control plan identifying the type and location of the erosion and sediment controls would be developed by the project designers, in this case, the Corps of Engineers and submitted for approval prior to contract award. The construction contractor becomes a co-permittee for the life of the project. Drawings from the final plans and specifications would be included indicating locations of all runoff controls for proposed temporary excavations or embankments for haul roads, material storage areas, structures, sanitary facilities, and stockpiles of excess or spoil materials. Erosion and sediment controls would be provided for on-site borrow and spoil areas to prevent sediment from entering nearby waters. Temporary excavations and embankments would be controlled to protect adjacent areas and nearby workers. If a contractor elects to change the approved plans, they must submit a revised plan for approval by Federal, state, and local authorities at least 30 days prior to starting construction (USACE, 2000).

4.2.7 Hydrology and Hydraulics

With the proposed features of the Riverfront Plan being located on the riverside of the flood protection, the potential impact to the river hydraulics (i.e., increase in water surface elevation, creation of eddies, vortices, and currents, and any increased velocities that may cause erosion) was assessed. None of the proposed project features noted above would significantly encroach into the available cross-sectional area between the flood protection levees and floodwalls on the Kingston-Edwardsville and Wilkes-Barre sides of the Susquehanna River to convey floodwaters through the Wyoming Valley (USACE, 2003).

In the event of a reoccurrence of the June 1972 flood (Tropical Storm Agnes), the proposed fishing platform/dock would be inundated by over 35 feet of water, whereas, the river landing and amphitheater/stage areas shown on would be inundated by over 25 feet of water. Water surface elevations and river velocities would not be discernibly increased by the incorporation of the proposed Riverfront Plan features into the project (USACE, 2003).

The addition of the fishing platform/dock, river landing, and the amphitheater/stage may cause localized flow turbulence, such as eddies, currents, and increased velocities, during flood events much smaller than the June 1972 flood. Erosion protection measures are included in the project design to prevent project features from being adversely affected by the induced localized flow turbulence. A dug toe, backfilled with rockfill, would be provided at the riverside toe of the river landing area to ensure structural stability. The dug toe would protect the project features from localized scouring of river bottom materials from undermining the river landing. In addition, portions of the river landing and amphitheater/stage areas would be paved. Therefore, the erosion potential of the features at the river landing and amphitheater/stage areas would be very low (USACE, 2003).

The remaining proposed project features (paving of the access road, upstream portal, and downstream portal) would not encroach into the river cross section at all. Therefore, these proposed features would have no impact on the river hydraulics during flood events.

4.2.8 Air Quality

Appendix E provides a detailed background and methodology used to develop the General Conformity evaluation.

For Luzerne County, the only parameter not attaining the National Ambient Air Quality Standard (NAAQS) is the ozone standard (USEPA, 2002). Areas that are designated in nonattainment of the ozone standard are further classified, in order of increasing severity, as Incomplete Data, Marginal, Moderate, Serious, Severe, and Extreme; the designation for Luzerne County is Marginal (PADEP, 2002). Luzerne County if further sub-classified as an ozone transport region.

The Clean Air Act General Conformity Rule (58 FR 63214, November 30, 1993, Final Rule, Determining Conformity of General Federal Actions to State or Federal Implementation Plans) dictates that a conformity review be performed when a Federal action generates air pollutants in a region that has been designated a nonattainment or maintenance area for one or more NAAQS.

The general conformity rule was designed to ensure that Federal actions do not impede local efforts to control air pollution. It is called a conformity rule because Federal agencies are required to demonstrate that their actions "conform with" (i.e., do not undermine) the approved State Implementation Plan (SIP) for their geographic area. The purpose of conformity is to (1) ensure Federal activities do not interfere with the air quality budgets in the SIPs; (2) ensure actions do not cause or contribute to new violations, and (3) ensure attainment and maintenance of the NAAQS. Federal agencies make this demonstration by performing a conformity review. The proposed actions at Wilkes-Barre would be subject to detailed conformity determinations unless these actions are clearly considered *de minimus* emissions. Use of the *de minimus* levels assures that the conformity rule covers only major federal actions (USEPA, 1993).

A conformity review requires consideration of both *direct* and *indirect* air emissions associated with the proposed action. Direct emissions are those that occur as a direct result of the action, and occur at the same time and place as the action. Sources that would contribute to direct emissions from this project would include demolition or construction activities associated with the proposed action and equipment used to facilitate the action (e.g., construction vehicles). Indirect emissions are those that occur at a later time or distance from the place where the action takes place, but may be reasonably anticipated because of the proposed action. To be counted as an indirect emission, the Federal proponent for the action must have continuing control over the source of the indirect emissions. Sources of indirect emissions include commuter activity to and from the construction site (e.g., employee vehicle emissions). Both stationary and mobile sources must be included when calculating the total of direct and indirect emissions, but this project involves only mobile sources.

EPA has set the *de minimus* threshold at 100 tons per year for NOx and 50 tons per year for VOCs (USEPA, 1993) for an ozone transport region such as Wilkes-Barre. If the *de minimus* emissions were exceeded by the proposed action, a conformity determination would be required.

The total direct and indirect emissions predicted for VOCs and NOx were summed (as described in Appendix E) to develop a total release for the preferred alternative. The 30-month totals were then divided by 30 to get a monthly release and then multiplied by 12 to calculate an annual release. This annual figure was then compared to the *de minimus* thresholds to determine whether the annual emissions from direct and indirect sources for each pollutant exceeded the *de minimus* thresholds.

Estimated annual emissions did not exceed the threshold limits. The sum total of direct and indirect sources for NOx and VOCs for the preferred alternative resulted in a predicted annual release of 39.09 tons of NOx (38.33 tons direct emissions + 0.76 tons indirect emissions) and 3.56 tons of VOCs (2.79 tons direct emissions + 0.77 tons indirect emissions). The annual emission rates for these criteria pollutants in an ozone transport region are 100 tons/year for NOx and 50 tons/year for VOCs. The estimates for the preferred alternative represent only 39% of the annual limit for NOx and 7% of the annual limit for VOCs; therefore, a conformity assessment is not required. Because projected emissions are below threshold levels, the action is exempt from further conformity analysis.

Table 4.1 Comparisons of Impacts for Water Quality

Resource	Alternative 1 Portals Only	Alternative 2 Portals and River Landing	Alternative 3 Portals, River Landing, and Fishing Platform/Dock	Alternative 4 Portals, River Landing, Fishing Platform/Dock, and Amphitheater/Stage	Alternative 5 Portals, River Landing, Amphitheater/Stage without Fishing Platform/Dock	Alternative 6 No Action	Actions Common to All Alternatives
Water Quality	No Effect	Placement of fill and rip-rap into river would result in a minor increase in turbidity caused by the placement of stone. Turbidity effects are expected to be localized and temporary and would only have a minor and temporary adverse impact on water quality.	Same effects as for Alternative 2 with the additional increase in turbidity caused by the insertion of the pipe piles for the foundation of the fishing platform/dock and the access ramp from the river landing to the fishing platform/dock. Turbidity effects are expected to be localized and temporary and would only have a minor and temporary adverse impact on water quality.	Same effects as for Alternative 3.	Same effects as Alternative 2.	No Effect	No Effect

Table 4.2 Comparisons of Impacts for Soils and Hydrology

Resource	Alternative 1 Portals Only	Alternative 2 Portals and River Landing	Alternative 3 Portals, River Landing, and Fishing Platform/Dock	Alternative 4 Portals, River Landing, Fishing Platform/Dock, and Amphitheater/Stage	Alternative 5 Portals, River Landing, Amphitheater/Stage without Fishing Platform/Dock	Alternative 6 No Action	Actions Common to All Alternatives
Soils	Minor and temporary soils disturbance for construction. No effects on prime or unique farmland.	Same as Alternative 1.	Same as Alternative 1.	Same as Alternative 1.	Same as Alternative 1.	No Effect	Same as Alternative 1.
Hydrology and Hydraulics	No effect.	Increase in the size of the river landing stability berm. No damaging effects to river hydraulics (creation of eddies, vortices, scour areas, etc.)	Same as Alternative 2.	Same as Alternative 2.	Same as Alternative 2.	No Effect	No Effect.

4.3 Biological Resources

Tables 4.3 and 4.4 provide a comparison of impacts for vegetation, wetlands, fish and wildlife, and threatened and endangered species for each of the alternatives. Ongoing coordination with resource agencies (U.S. Fish & Wildlife Service, PA Fish & Boat Commission, PA DNR) regarding the effects of the proposed actions on habitat, wetland, and protected species is expected to confirm the effects to these resources are not significant. There would be no predicted effects on any threatened or endangered species or their critical habitat. The National Marine Fisheries Service does not designate any Essential Fish Habitat in the project area (NOAA, 2003). Prior coordination with each of these resource agencies for the previous GDM Phase I and GDM Phase II has indicated that there were no concerns (USACE, 1981; USACE, 1995; USACE, 1996, USACE, 2001).

Construction of the portals, amphitheater and stage, access road, and miscellaneous recreational accoutrements would take place in areas of previous disturbance that are currently grass on top of placed fill. All of the features would be built outside areas where riparian wetlands occur and construction laydown areas or buffers would avoid these areas as well. There would be no planned disturbances within the rooted aquatic wetland community along the shoreline shallows of the Susquehanna River downstream of the Market Street Bridge. Design considerations were made to avoid these habitats. Upstream of the Market Street Bridge, there are no vegetated shallows or riparian fringe because of the existing rockfill berm. Erosion and sediment control measures, as well as best management practices, would be implemented in accordance with the NPDES permit to reduce the risk of unintentional disturbance to these areas during construction.

Prior to building the amphitheater and stage, site preparation would include the clearing of the thin (10-20 feet) fringe of woody shrubs and small trees that have grown through the rip-rap and stone block placed there previously. Maintaining these areas free from woody vegetation is currently part of the existing operations and maintenance plan for the flood protection.

Construction of the river landing and fishing platform/dock would take place within open, deep-water areas of the river. Construction would have direct effects on the sediments and water (i.e., temporary turbidity). Section 2.2.2.1 provides a detailed description of the steps involved in constructing these features. The affected area is deep-water habitat, would not be considered a jurisdictional wetland, and does not support vegetated shallows or submerged aquatic vegetation. Physical changes during construction of the river landing, fishing platform/dock, and rockfill groins would involve:

- Permanently removing approximately 1,500 cubic yards of river bottom materials excavated for the dug toe (trapezoidal shaped excavation approximately five feet deep x 10 feet wide at the bottom x 450 feet long),

- Permanently burying approximately 1,250 square yards (approximately 25 feet wide x 450 feet long) of river bottom in rockfill for the river landing expansion,

- Temporarily burying approximately 900 square yards of river bottom (approximately 60 feet wide at base x 65 feet long x 2 groins) for the groin construction,

- Permanently creating approximately 550 square yards of rock-bottom substrate in a predominantly soft-bottom areas after the bottom-most layer of the groin rockfill would not be retrieved and would remain on the river bottom (approximately 60 feet wide x 40 feet long beyond new river landing x 2 groins), and

- Permanently creating approximately 60 square yards of benthic habitat on the riverward edge of the river landing by configuring the riverward edge in a saw tooth formation (in plan view) rather than straight. Small groins would extend approximately 6 feet into the river from the toe of the river landing, would be about 3 feet high by 5 feet wide at an approximate 25-foot spacing. This configuration would produce a rocky substrate with a series of alternating current deflectors and eddies that would be attractive to benthic invertebrates, minnows, and predatory fishes.

Constructing the groins perpendicular to the existing berm and extending slightly beyond the new berm would reduce the river velocity and currents within the work area, thereby reducing turbidity during excavation and rockfill placement. Based on experience, the rockfill material placed into the river would be very clean and does not create problems with turbidity during placement. Groin construction was assumed to take approximately 2 to 3 weeks.

Table 4.3 Comparison of Impacts for Vegetation and Wetlands

Resource	Alternative 1 Portals Only	Alternative 2 Portals and River Landing	Alternative 3 Portals, River Landing, and Fishing Platform/Dock	Alternative 4 Portals, River Landing, Fishing Platform/Dock, and Amphitheater/Stage	Alternative 5 Portals, River Landing, Amphitheater/Stage without Dock	Alternative 6 No Action	Actions Common to All Alternatives
Vegetation	No Effect. Actions within mowed and maintained area and would be re-planted after construction.	Moderate Effect. Mature sycamore, silver maple, and elm trees would be removed to open views of the river from the portal. Area to be disturbed at the toe of the existing stability berm is unvegetated.	Same as Alternative 2.	Same as Alternative 2, plus the removal of an approximately 10-20 foot wide, 2-5-year aged, band of riparian shrub fringe, along the downstream bank of the riverfront. Maintaining riverbank free of woody vegetation part of current O&M plan.	Same as Alternative 4.	No Effect.	No Effect.
Wetlands	No Effect	No Effect. Area to be disturbed at the toe of the existing stability berm is unvegetated.	No Effect. Area to be disturbed at the toe of the existing stability berm is unvegetated.	No effects to rooted aquatic wetland community along the shoreline shallows. Woody fringe would be cleared for stage construction and to improve view of river. With woody vegetation removed, area would transition to emergent wetland species over approximately 1 acre.	Same as Alternative 4.	No Effect.	No Effect.

Table 4.4 Comparison of Impacts for Fish and Wildlife and Threatened and Endangered Species

Resource	Alternative 1 Portals Only	Alternative 2 Portals and River Landing	Alternative 3 Portals, River Landing, and Fishing Platform/Dock	Alternative 4 Portals, River Landing, Fishing Platform/Dock, and Amphitheater/Stage	Alternative 5 Portals, River Landing, Amphitheater/Stage without Fishing Platform/Dock	Alternative 6 No Action	Actions Common to All Alternatives
Fish and Wildlife	No Effect.	Temporary turbidity effects from digging toe and placement of materials for river landing, groins, and fish habitat. Overall improvement of fish habitat after groin removal.	Same as Alternative 2.	Same as Alternative 2 with the additional removal of an approximately 10-15 foot wide, 2-5-year aged, band of riparian shrub fringe, along the downstream bank of the riverfront. Slight reduction in low quality habitat for shoreline birds or waterfowl.	Same as Alternative 4.	No Effect.	No Effect.
Threatened and Endangered Species	No Effect	No Effect.	No Effect.	No Effect.	No Effect.	No Effect.	No Effect.

4.4 Hazardous, Toxic, and Radioactive Waste (HTRW)

Regardless of the alternative implemented, there would be no contact with HTRW materials or the generation of HTRW wastes expected.

Although no specific HTRW concerns were identified from previous site investigations, the potential to create HTRW materials during the construction process remains an environmental concern. Storage, fueling, and lubrication of equipment and motor vehicles associated with the construction process would be conducted in a manner that affords the maximum protection against spill and evaporation. Fuel, lubricants, and oil would be managed and stored in accordance with all Federal, Commonwealth, regional and local laws and regulations. Used lubricants and used oil would be stored in marked corrosion-resistant containers and recycled or disposed in accordance with appropriate requirements.

The construction contractor would be required to develop a Spill Control Plan to include: 1) the name of the individual who would report any spills or hazardous substance; 2) a list of the required reporting channels and telephone numbers; 3) the name and qualifications of the individual who would be responsible for implementing and supervising the containment and cleanup; 4) the training requirements for contractor's personnel and methods of accomplishing the training; 5) a list of materials and equipment to be immediately available at the job site, tailored to cleanup work of the potential hazard(s) identified; and 6) the names and locations of suppliers of containment materials and locations of additional fuel oil recovery, cleanup, restoration, and material placement equipment available in case of an unforeseen spill emergency.

In the event of an unplanned discovery of HTRW materials during construction, work that could affect the contaminated materials would be stopped and appropriate notification and coordination with PADEP would be completed. Investigations would be conducted to characterize the nature and extent of the contamination and establish appropriate resolution.

4.5 Cultural Resources

Appendix F of the 1996 SEIS (USACE, 1996) included the cultural resources Memorandum of Agreement (MOA) between the Army Corps of Engineers, Baltimore District, and the Pennsylvania State Historic Preservation Officer. Within the MOA, the City of Wilkes-Barre is listed as an interested party invited to concur with the agreement to undertake the overall Levee Raising Project. The MOA also specifies the stipulations to take into account the effects on historic properties. This project would be conducted under the existing MOA within a previously disturbed area of ongoing construction for the levee raising.

All aspects of the proposed undertaking (stage, amphitheater, river landing and fishing platform/dock) would be on the riverside of the levee and as such, are going to be constructed within areas previously disturbed by the original levee construction. The River Commons Park, with its monuments and trees would not be affected by these project modifications.

Additionally, the project modifications would be visually obscured from the historic structures on the east side of River Street.

Implementation of any of the Alternatives (1-5) would not be expected to result in any disturbance of, or affects to, cultural resources and would not impact any historic features in the River Commons Park Historic District. Information concerning the proposed design modifications and recreational enhancements was provided to the Pennsylvania Historical and Museum Commission (State Historic Preservation Officer) with an invitation to comment on the proposed project (USACE, 2003b). In addition, the draft EIS will be provided to the Pennsylvania Historical and Museum Commission for formal comment during the public and agency review period.

4.6 Recreational Resources

Current visitation at the Riverfront Park site by special event users was estimated by examining current attendance at the events (for existing events) and potential market for the event, and the likelihood that other planned recreational elements would be constructed in the study area. Potential visits to the Wilkes-Barre riverfront were estimated by applying a factor (i.e., exposure probability) that represents that portion of event attendance that would go to the riverfront. Professional judgment was used in selecting an appropriate exposure probability, taking into account several factors affecting potential visitation, including:

- Number of similar recreation facilities in the region;
- Location of similar recreation facilities;
- Capacity of the proposed recreation facility;
- Recreation habits of the population in question; and,
- Actual visitation at similar facilities in the region and nationwide.

The amount of visitation for new runs or walks, new festivals, and other events that would be planned for the Riverfront Park was based on information gathered from local planners. Conservative estimates were used for exposure probability, because reliable market-based data were not available.

The Alternatives (1-5) were each evaluated to determine an estimation of recreation visitation for each alternative.

As shown in Table 4.5, expected visits increase dramatically with the addition of the river landing in Alternative 2. The addition of the fishing platform/dock in Alternative 3 would be expected to result in a modest increase in expected visits, mostly associated with fishing and boating by primary users. Alternative 4, which includes the amphitheater and stage, would result in a significant increase (approximately 100,000) in expected visits over Alternative 3. The amphitheater could be expected to draw over 40,000 new special event and multi-destination visitors to the Riverfront Park. In addition, the seating and river vistas at the amphitheater are

expected to increase picnicking opportunities for primary users, especially college students and downtown workers.

Potential special events at the river landing and Riverfront Park include expansion of existing festivals to the Wilkes-Barre waterfront, such as the Old-Fashioned Fourth of July and the Wyoming Valley Riverfest. In addition, a variety of new recreational and cultural events would be planned to take advantage of the park facility. Examples from local planners and events held at similar riverside projects throughout the nation include: summer lunch drama/music series at the amphitheater; community rowing events; fishing clinics and tournaments; concerts and other entertainment at the amphitheater (regular series and special artists); collaborative events/corporate outings; competitive runs/walks; and family reunions, receptions and picnics. Although these types of activities currently take place elsewhere in the region, the Riverfront Park would feature the Susquehanna River as a unique visual amenity to improve the aesthetic appeal and increase per capita participation in activities with unmet demand.

Observed attendance at similar waterfront parks in Hartford and Indianapolis were used to refine visitation estimates in Table 4.5. Attendance data at those facilities were scaled back in accordance with local population levels and facility profiles to ensure that reasonable visitation levels were developed. Particular effort was made to avoid double-counting visitation. Consequently, visitation estimates are reasonable and conservative.

4.7 Aesthetic Resources

The permanent changes to Wilkes-Barre focus the visual impacts on the Downtown Business District, the River Commons, and others that have a currently-obscured view of the Susquehanna River. Potential visual impacts are summarized on Table 4.5 and include temporary and long-term visual changes during and after construction of the features.

Construction activities with temporary visual impacts include the establishment and usage of construction and material laydown areas, crane usage for the placement of sheet and pipe pile, vehicular and earth-moving traffic within the project area. The potential long-term visual impacts would result from the permanent change in the visual appearance of the waterfront and River Commons from downtown Wilkes-Barre and across the Susquehanna River. To the extent possible, final design would include features to enhance the aesthetic impacts such that the structural features would blend in with the natural riparian vegetation along the Susquehanna River.

The construction contractor would typically remove all signs of temporary construction facilities such as haul roads, work area, structures, foundations of temporary structures, stockpiles of excess or waste materials, and other vestiges of construction prior to final acceptance of the work. The disturbed area would be graded, filled and the entire area seeded unless otherwise indicated to minimize the permanent visual impacts.

Table 4.5 Comparisons of Impacts for Recreational and Aesthetic Resource

Table 4.5 Comparisons of Impacts for Recreational and Aesthetic Resources

Resource	Alternative 1 Portals Only	Alternative 2 Portals and River Landing	Alternative 3 Portals, River Landing, and Fishing Platform/Dock	Alternative 4 Portals, River Landing, Fishing Platform/Dock, and Amphitheater/Stage	Alternative 5 Portals, River Landing, Amphitheater/Stage without Fishing Platform/Dock	Alternative 6 No Action	Actions Common to All Alternatives
Recreational Resources	Results in a predicted 40,099 visitors per year.	Results in a predicted 189,705 visitors per year.	Results in a predicted 226,887 visitors per year.	Results in a predicted 327,296 visitors per year.	Results in a predicted 243,593 visitors per year.	Results in a predicted 5,012 visitors per year.	Not evaluated separately.
Aesthetic Resources	Significantly beneficial effects of reconnecting downtown Wilkes-Barre to the waterfront. Temporary adverse aesthetic effects during construction.	Same as Alternative 1.	Same as Alternative 1 with addition of river landing feature and longer construction duration.	Same as Alternative 1 with addition of amphitheater/stage and longer construction duration.	Same as Alternative 1 without the fishing platform/dock and longer construction duration.	Continued adverse aesthetic impacts from levee and levee raising.	Same as Alternative 1.

4.8 Flood Protection, Public Safety, and Protection of Children

Flood Protection

Executive Order 11988 (1977) requires federal agencies to avoid, to the extent possible, the long and short-term adverse impacts associated with the occupancy and modification of flood plains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. Because of the need to reconnect the waterfront to downtown Wilkes-Barre, the project features must be built on the river side of the levee and within the floodplain. This will physically and aesthetically reconnect the community with the riverfront that the levee effectively cut off.

The significant alteration of floodplains through the project area has already taken place with the development of Wilkes-Barre and the construction of the existing flood protection system. Implementation of any of the Alternatives (1-5) would result in no reduction to the flood protection throughout the Wilkes-Barre reach (USACE, 2003). The addition of these recreational facilities would not be expected to contribute to debris accumulation during a flood and all infrastructure would be designed to withstand flood forces. Aspects of the design modifications and recreational enhancements would be designed and constructed in such a fashion to ensure continued maintenance of flood protection at all times.

Protection of Children

On April 21, 1997, President Clinton issued Executive Order (EO) 13045, Protection of Children from Environmental Health Risks and Safety Risks, which recognizes that a growing body of scientific knowledge demonstrates that children may suffer disproportionately from environmental health and safety risks. This EO requires Federal agencies, to the extent permitted by law and mission, to identify and assess such environmental health and safety risks.

With regard to EO 13045, the project would improve an area by providing recreational areas that are designed and constructed with safety measures as basic design considerations. No aspect of the project would expose children to materials having an adverse effect on their health. Areas where potential fall hazards exist (construction staging areas) would be provided with perimeter fencing and/or signed as appropriate to deter unauthorized access especially to ensure children's safety. The local authorities would be responsible for monitoring the project during off hours to ensure the project is policed to deter unauthorized access and to ensure the child safety measures included in the project design are maintained.

4.9 Socioeconomics

4.9.1 Land Use

Implementation of the Alternatives (1-5) would result in minor, local modifications to a previously disturbed landscape. Regardless of the alternative implemented, there would be a change in land use from a modified urban floodplain to a public municipal amenity encouraging waterfront activities.

4.9.2 Population

The project would be performed in an area where ongoing construction activities have been performed by local firms whose employees are able to commute to the work site without relocating families. Construction of the project would require no specialized expertise that would lead to an influx of workers during the construction phase. As such, the construction phase of the project would not be expected to lead to any temporary or permanent increase in the population.

At the completion of construction, features would be used as they were designed and would be expected to increase use of the area, but would not be a significant enough change to Wilkes-Barre, to either increase or decrease the population.

4.9.3 Transportation

Estimates of the number of trucks and total number of miles traveled to complete each alternative were developed based on materials assumptions (USACE, 2003 and USACE, 2003a). The estimated numbers were then rounded up to a conservatively larger number of trucks and total miles traveled. The results of that evaluation are shown, by alternative, in Table 4.6.

Baseline traffic numbers for River Street upstream and downstream from the Market Street Bridge are 16,000 and 20,000 vehicles per day, respectively. Traffic effects would be most profoundly realized along River Street, as all construction-related vehicular access to and from the site would require traveling on River Street. Market Street represents the busiest local road in providing access to the project site and therefore presents a good indicator for traffic effects analysis.

The duration for construction assumed for Alternatives 1 and 2 are 18 months and for Alternatives 3, 4, and 5 would be 30 months. Assuming 20 workdays per month, times the 18 and 30-month construction period, there would be approximately 360 and 600 days, respectively, of activity during which materials could be transported to or from the site.

Project experience in the Wyoming Valley indicates that construction activities are seasonally influenced with the majority of activity taking place during the seasonally warmer summer. As such, the transportation in support of the construction was assumed to have uneven seasonal distribution. The seasonal distribution of activity was assumed as follows: winter 5%, spring 20%, summer 50%, and fall 25%.

For each of the alternatives, the total transportation events were distributed according to the seasonal distributions, by month, for either 18 months (Alternative 1 and 2) or 30 months (Alternative 3, 4, and 5). Under this set of assumptions, the greatest increase in traffic was predicted for transportation of materials during the summer months (July, August, and September) while implementing Alternative 2. An average increase of 18 vehicles per workday coming to the project area was the largest traffic increase predicted. All other peak months of

traffic impacts were less than Alternative 2. Given baseline traffic for River Street (16,000 vehicles per day) and Market Street (20,000 vehicles per day) the average daily increase in traffic would represent a 0.1% increase on River Street and 0.09 % increase on Market Street. Even if the number of vehicles were five times the estimated number on a given day (5 x 18 = 90), it would still result in less than a one percent increase in daily vehicle traffic on River Street and Market Street.

Once construction is completed, no significant increases to traffic are expected associated with routine use (not during special events) of the area. Traffic and parking demands would not be expected to change significantly as many of the park's visitors would come on foot or on bicycle.

A substantial increase in pedestrian traffic, vehicular traffic, and demand for parking in the downtown Wilkes-Barre waterfront is expected during special civic events. The greatest potential for negative effects would exist during events intended to attract large crowds to the waterfront area. For major events planned on the waterfront (e.g., fireworks display), pedestrian safety could be improved by temporarily restricting vehicle access along River Street or with the addition of traffic officers to assist in the direction of pedestrians and vehicles during arrival and departure.

Parking on the waterfront is limited and is one of the issues being addressed by the Project Sponsor, but for which the Corps is precluded from financial participation (See Section 2.5.1 Riverfront Plan Elements Not Eligible for Corps Participation). The Wilkes-Barre Riverfront Plan includes a parking facility across River Street from the Market Street Bridge. While the Corps of Engineers is not authorized to participate in cost sharing a parking facility, local plans are to pursue this through alternate funding sources.

4.9.4 Utilities

Implementation of any of the Alternatives (1-5) would result in minor, local modifications to available utilities. Demand associated with the new lighting and other utility services would not necessitate system upgrades. Regardless of the alternative implemented, there would be no effects on the utilities.

4.9.5 Employment and Income

Construction of any of the Alternatives (1-5) would result in minor, temporary benefits to the local economy. The short duration of construction and overall cost similarities among the alternatives is not sufficient to significantly differentiate them from one another in terms of their effect on the local employment and income. Regardless of the alternative implemented, there would only be short-term and minor increases to the employment and income associated with project construction.

The overall effect on employment and income after construction, in large measure, depends on the other amenities and improvements planned for downtown Wilkes-Barre. Further discussion of the other potential projects is found in Section 4.12 Cumulative Effects.

4.9.6 Education

Implementation of any of the Alternatives (1-5) would result in no socioeconomic changes related to education.

4.9.7 Major Damage Centers

Implementation of any of the Alternatives (1-5) would result in no changes to the major damage center of Wilkes-Barre; flood protection would be maintained throughout construction and portal closure structure doors could be adequately deployed in sufficient time to preserve the flood protection.

4.9.8 Public Facilities

Implementing any of the Alternatives (1-5) would result in no changes to the public facilities of Wilkes-Barre. The flood protection would be maintained throughout construction and portal closure structure doors could be adequately deployed in sufficient time to preserve the integrity of the flood protection and protect public facilities in Wilkes-Barre.

4.10 Noise

Noise is a potential environmental issue associated with construction, excavation, and materials transportation activities necessary to complete the proposed action. The primary effect of noise from construction activities on exposed communities is one of annoyance.

Day-Night Average Sound Level is the 24-hour average sound level, in decibels, obtained from the accumulation of all events with the addition of 10 decibels to sound levels in the night from 10 P.M. to 7 A.M. The weighting of nighttime events accounts for the usual increased interfering effects of noise during the night, when ambient levels are lower and people are trying to sleep. The U.S. Department of Housing and Urban Development has established a Day-Night Average Sound Level standard of 65 dB for eligibility for federally guaranteed home loans. This level simply serves as a basis for evaluation, not as any regulatory limit or formal standard.

Construction of the features would include the prolonged use of earth-moving equipment, trucks to haul materials to and from the site, and equipment used for construction (e.g., vibrating hammer for placement of sheetpile and pipepile). Noise impacts associated with the proposed project would be generated from the temporary construction and materials transportation activities. Construction noise is typically limited to standard business hours and would not be expected to result in any serious disturbances to residents. The construction contractor would be

expected to keep construction activities under surveillance and control to minimize environmental damage by noise.

The significance of a noise impact determination is predicated on quantifying the effects of the predicted increase in noise over existing noise levels. Because the area has been actively involved in ongoing construction activities of a similar nature, no predicted increases in noise levels are expected. Existing noise levels would continue through the period of construction (18 months or 30 months). Regardless of the alternative implemented, there would only be a relatively short-term prolonging of construction noise associated with project construction.

Noise related to events (e.g., concerts, etc.) held at the waterfront park would result in an increase in noise. The physical barrier of the levee and wall atop the levee should help mitigate the noise effects to the local community from events on the waterfront.

Table 4.6 Comparisons of Impacts for Traffic

Resource	Alternative 1 Portals Only	Alternative 2 Portals and River Landing	Alternative 3 Portals, River Landing, and Fishing Platform/Dock	Alternative 4 Portals, River Landing, Fishing Platform/Dock, and Amphitheater/Stage	Alternative 5 Portals, River Landing, Amphitheater/Stage without Fishing Platform/Dock	Alternative 6 No Action	Actions Common to All Alternatives
Traffic	2,600 Trucks and 50,000 miles of transportation. Average daily increase predicted of 11 trucks per day.	4,300 Trucks and 103,000 miles of transportation. Average daily increase predicted of 18 trucks per day.	4,415 Trucks and 105,500 miles of transportation. Average daily increase predicted of 13 trucks per day.	4,765 Trucks and 120,500 miles of transportation. Average daily increase predicted of 14 trucks per day.	3,930 Trucks and 110,000 miles of transportation. Average daily increase predicted of 11 trucks per day.	No Transportation.	800 Trucks and 16,000 miles of transportation. Total numbers included with each of the alternatives.

4.11 Environmental Justice

In order to have potential environmental justice impacts, a proposal must have potential for disproportionately high and adverse human health or environmental effects on low-income populations, minority populations, or Indian tribes. This action has been evaluated for potential disproportionately high environmental effects on minority and low-income populations. The evaluation concluded that there would not be a high human health or environmental impact on minority and low-income populations. The minority population within the affected area does not exceed 50 percent and there are not more minorities in the affected area than other areas of the community. Implementing any of the alternatives would not result in any change to environmental resources that individuals involved in subsistence fishing or hunting utilize. None of the alternatives would involve the release of hazardous, toxic, or radioactive materials to which minority or low-income populations could be exposed. As such, the context nature of the alternative being considered precludes the potential to create disproportionately high and adverse human health or environmental effects on low-income populations, minority populations, or Indian tribes.

4.12 Cumulative Effects

The CEQ Regulations require "connected actions, cumulative actions, and similar actions" (40 CFR 1508.25) be considered together in a single NEPA document. Connected actions are defined as actions that: (i) automatically trigger other actions, which may require environmental impact statements, (ii) cannot or will not proceed unless other actions are taken previously or simultaneously, and (iii) are interdependent parts of a larger action and depend on the larger action for their justification. Cumulative actions, when viewed with other Proposed Actions, have cumulatively significant impacts and should be discussed in the same document. Similar actions are defined as actions which, when viewed with other reasonably foreseeable or Proposed Actions, have similarities that provide a basis for evaluating their environmental consequence together, such as timing or geography.

Cumulative effects associated with construction would be limited to minor and temporary increases in traffic, the local economy, noise, and fugitive dust. These effects would be substantially the same as the activities associated with the ongoing levee raising. Through implementing careful construction practices, no significant cumulative effects would be predicted.

Projects identified throughout Sections 5, 6, and 7 could be conducted nearby the project area or in the region and would result in an overall benefit to the environment and to people. These ongoing projects demonstrate the commitment by Federal, Commonwealth, county authorities, and the public to improve the human and natural environment in Wilkes-Barre and the Wyoming Valley. The cumulative effects of adding the recreational enhancements to the Wilkes-Barre waterfront, in part, depend on what other projects in proximity are actually completed. Other non-cost shared improvements to quiet the traffic on River Street are in the early stages of consideration by WVFPA, but are not part of this project.

The greatest potential for negative impacts would likely involve the increase in pedestrian and passenger vehicle traffic in the downtown area and post-event debris and garbage associated with large events on the waterfront area. The operations and maintenance plan would address post-event clean up as part of the sponsor's responsibility. Through implementing careful event coordination practices (e.g., traffic police officers, closing off sections of streets), significant cumulative traffic effects should be avoidable.

5 Project Refinements Within the Wyoming Valley

After publication of the 1995 GDM/SEIS and 1996 GDM/SEIS update, some modifications have been incorporated into the Wyoming Valley Levee Raising Project (USACE, 2002b) design as described below.

Exeter
Real estate acquisition problems led to the addition of a stoplog closure at the railroad. Removal of a tank farm in the upstream portion of the project permitted placement of a levee embankment rather than sheet pile as described in the GDM and at the site of the former tank farm, 300 linear feet (LF) of drainage pipe and drainage fill were added to provide additional drainage.

Near the Hicks Creek culvert, the flood protection was realigned to include a levee in place of sheet pile. This change was a result of reduced property acquisition from the railroad. As a result, landside residential property acquisition was also reduced. Mechanically Stabilized Embankment (MSE) wall was used in place of sheet pile to prevent removal of a private pool in the area of the realignment. The Hicks Creek culvert was extended landward to reduce the slope steepness.

Drainage structure and associated piping were added to the local pumping station to prevent levee erosion. Pump discharge from a downstream tank farm was replaced. Engineers revised the ramp design over the levee at the downstream end in order to improve the slope and site distance. A sandbag closure was also added. Removal of some adjacent materials resulted in a required extension to the downstream tie-out. The Exeter project costs were also altered to include slope stabilization at Forty Fort.

Swoyersville-Forty Fort
Slope stabilization costs at Forty Fort were excluded from the Swoyersville-Forty Fort costs and included in the Exeter project costs. Asphalt paving was added to the levee crest and ramps. An access road and parking lot were added at the upstream end of the levee. An access road to the riverside boat launch was surfaced with gravel. A seepage berm was used in place of relief wells in the upstream reach.

At Abrahams Creek, the drainage structure was not raised at all, as previously described in the GDM. MSE wall was added to permit access over the sheet pile by both the public and maintenance personnel. The sheet pile cap was redesigned to permit the use of standard sheet sections in the uppermost reach. A slope failure at the downstream end was repaired as part of the Levee Raising Project.

Breaker refuse was added to re-grade the downstream embankment foundation and specific low areas on the riverside of the embankment. Landscaping was added to the wall along River Street and to the yard of a property owner at the levee.

Near the Forty Fort cemetery, the sheet pile cap was redesigned to incorporate a berm in order to minimize impacts to the cemetery. A drainage ditch, inlets and piping were added between the levee and the landside and abandoned railroad bridge piers were removed during emergency slope repair.

Kingston-Edwardsville
Asphalt paving was added to the levee crest and ramps and the upstream tie-out was realigned to accommodate a parking lot. Existing relief wells were determined to be unnecessary and were abandoned, and the sandbag closure at Pierce Street was eliminated.

Downstream of Pierce Street, sheet pile I-wall was used in place of concrete T-wall and ramps were added. The Market Street closure structure was redesigned and costs were assigned to the pumping station contract. Riverside ramps at Market Street were realigned to permit public access under the bridge. Drainage inlets and pipes were added between the levee and the tennis courts, and an at-grade access road was provided for the Wyoming Valley Sanitary Authority Loveland pumping station.

At the Route 11 closure, the ramps were extended and the traffic light was modified. Riprap was replaced downstream of the Woodward pumping station, and an access ramp was added at Gateway Apartments. An access road to the pumping station was included and the road ties the levee path to the public street. A drainage inlet and culvert were added to accommodate the new access road. The riverside ramp at Loveland Relief Culvert was not constructed. Near the railroad at Kirby Park and Gateway Apartments, barricades were added to the design.

Wilkes-Barre/Hanover Township
The Wilkes-Barre/Hanover Township project was split into several contracts to facilitate project administration. Asphalt paving was added to the levee crest and ramps and the sheetpile cap was redesigned to eliminate the need for new sheetpile. Fill was added to the riverside of the cap and in the river because of a Value Engineering analysis. The Market Street closure was redesigned and added to the pumping station contract.

Contrary to the GDM, the stoplog storage building will be built offsite by the project sponsor. The boat ramp parking has been relocated from the riverside of the flood protection system to the landside. Downstream of the connecting railroad, the raising was redesigned from landward raising to straddle raising because of concerns regarding the existing sewer system. MSE walls were replaced with embankment and riprap at the Horton and Delaney pumping stations and at the Willow relief culvert. Seepage berms were installed in place of relief wells near the Delaney pumping station and the Willow Creek relief culvert.

The Carey Avenue closure, as outlined in the GDM, was eliminated due to Pennsylvania Department of Transportation plans for a bridge replacement. Two railroad bridges were

removed by the local sponsor. A pedestrian cross-over ramp, stoplog closure and riverside walkway were added to permit safe access under the railroad.

Survey discrepancies led to the addition of T-wall at Riverside Drive. A railroad closure was redesigned to accommodate new railroad restrictions, and a new on-site storage building is required.

From Fellows Avenue to Solomon pumping station, the levee crest was widened to 14 feet, paving was widened to 12 feet, and turnarounds were added for safety. At the River Commons, the embankment raising was changed to sheet pile with embankment. Riverside ramps were added at Carey Avenue.

Plymouth
Asphalt paving was added to the levee crest and ramps. A ramp and sandbag closure were added at the upstream end of the flood protection project to provide property owner access. Another ramp may be added at the upstream end of the project to provide access for a future trail along an abandoned railroad bed and another ramp may be added at the upstream end of the project.

Mechanically stabilized earthen (MSE) wall was added at the upstream end of the Plymouth project due to property acquisition difficulties. The upstream end of the levee was realigned to take advantage of the abandoned Carey Avenue Bridge. In addition, several ramps were revised and added.

The Coal Creek relief culvert was extended to eliminate the MSE wall and provide improved access for operation and maintenance of the Wadham pumping station. At the pumping station, the MSE wall was replaced with a steeper embankment. A parking lot and ramp were added at the downstream tie-out. Sheetpile was replaced with concrete wall at the Wyoming Valley Sewer Authority pumping station, and a bridge removed by the local sponsor allowed an embankment to be constructed. Trench drains were installed at the pumping stations instead of the relief wells as discussed in the GDM.

The GDM discussed mitigation plans for Sunbury, Pennsylvania in detail. A substantial change in the actual construction of mitigation measures at Sunbury involved the use of pre-cast concrete in place of cast-in-place concrete for the wall raising.

At the Brown Creek Pressure Conduit, duckbill valves may be installed on ungated drainage pipes connected to conduit.

Pumping Stations
Design changes to the pumping stations associated with the flood protection project were substantial following the 1996 GDM and accounted for approximately $36,000,000 in increased project costs. These changes are broken into 10 categories as outlined below.

1. Structural Changes - All Pumping Stations

Following the GDM and prior to construction, the stormwater and sanitary pumping stations were analyzed for minimum reinforcing steel requirements to ensure ductile failure. The analysis resulted in placement of additional remedial wall panels at the following pumping stations: Union Street stormwater station, Ross Street stormwater station, Old River Road stormwater station, D & H Railroad stormwater station, Horton street stormwater station, Delaney Street stormwater station, Solomon Creek stormwater station, Church Street stormwater station, and Loveland Avenue stormwater station.

The stormwater and Sanitary pumping stations were analyzed to determine if any structural elements were stressed beyond allowable working stress limits during Tropical Storm Agnes in 1972. This analysis resulted in additional remedial construction at the Union Street Sanitary Station.

The Sanitary pumping stations were also analyzed to determine if the existing foundation slabs were adequate under the increased hydrostatic pressures and dead loads. All foundation slabs were found to be adequate and no additional remedial construction was required.

2. Additional Structures Considered

Thirteen diversion chambers within the Wyoming Valley sanitary system were analyzed for increased hydrostatic pressures expected to result from the levee raising. Under normal conditions, the diversion chambers serve as a means to divert flow from the combined system away from the stormwater stations and into the WVSA stations. The analysis resulted in remedial construction at the Delaney Street diversion chamber and the Market Street diversion chamber.

The WVSA effluent chamber was analyzed for increased hydrostatic pressure expected to result from the levee raising. The effluent chamber is located within the line of protection at the WVSA facility in Hanover Township. The chamber was raised to accommodate the new levee height, and structural remediation was installed because of the analysis.

3. Stormwater Station Mechanical and Electrical Systems

The mechanical and electrical systems of the 13 stormwater stations were evaluated to determine if rehabilitation or upgrades would be required. The evaluation resulted in the following:

- At each of the 13 stormwater stations, existing pumps were removed from the stations, inspected and rehabilitated. In some cases, pumps were relocated to different stations, upgraded or replaced with new pumps to meet any additional capacity requirements due to the levee raising.

- New switchgear replaced aging switchgear at each of the thirteen stations. Structural steel platforms were installed to raise the new switchgear above the motor floor. The platforms

allowed for easy installation of electrical feeds and provided additional protection from adverse conditions.

- The electrical distribution was replaced with a double-ended, medium voltage distribution system with unit substations providing 15KV utility service at each end. The 15KV cable bus(es) were provided along the levee from end to end with each bus tapped to feed two pad-mounted transformers at each pump station.

- A Programmable Logic Controller (PLC) based system, with the PLC's in each pump station tied to a central control and monitoring station, was designed and specified.

- Flapgates and sluice gates were inspected, rehabilitated and in some cases replaced. Gate anchor bolts were torque tested and replaced, if necessary.

- Trash racks were inspected, rehabilitated and replaced, if necessary. Additional trash racks were provided over the intake chamber weir at the Woodward pumping station.

- Pump suction bell strainers were replaced with stainless steel units with a closer bar spacing.

4. Stormwater Station Buildings and Support Systems

The thirteen stormwater station buildings and support systems were evaluated along with the mechanical and electrical systems. The evaluation resulted in the following rehabilitation:

- Entrance doors were repaired or replaced based on their condition. Windows were repaired or completely removed and openings were filled with CMU and parge coated.

- The existing roof systems were replaced on 10 of the 13 stations, and any deteriorated superstructure concrete was repaired as necessary on all 13 stations.

- Deteriorated metal frames, grates and handrails were replaced, as necessary, in intake and discharge chamber top slabs.

- Steel plate sump access covers were repaired by cleaning and painting, where necessary.

- Sump access ladders were repaired, replaced or modified to accommodate new structural wall panels.

- Sump pumps were added to allow dewatering of the station sumps after a storm event to allow for maintenance and to provide a dry environment for equipment longevity.

- Old coal furnaces and toilets were removed from each of the 13 stations.

- Ductwork and exhaust fans were added to better ventilate the stations.

5. Woodward Stormwater Pumping Station

The Woodward stormwater station was re-evaluated and partially re-analyzed due to the substantial amount of remedial construction and rehabilitation initially recommended. The re-evaluation resulted in the following:

- Remedial construction was performed in the existing pressure culvert in lieu of complete replacement.

- For safety reasons, an adequate flotation factor of safety was achieved by placing additional concrete in the sump bottom instead of adding a pipe and inlet valve to the riverside of the station. The inlet valve was proposed to control water levels in the sump to counteract the uplift forces during the design flood event.

- Overstress remediation schemes within the sump were revised for increased constructability.

- The pressure culvert gate operator and gate operator platform were raised to accommodate the new top of protection elevation.

- Pavement from the existing access road to the main entrance of the pumping station was added.

- Tie-in from the east side of the pumping station to the raised earth levee was changed from a MSE wall to a sheet pile and concrete cap wall.

- The existing construction access path along Toby Creek would remain as a permanent maintenance road. The road was going to be removed; however, permanent access to the pump station is needed and thus the road is needed.

6. Market Street Stormwater and Sanitary Pumping Stations

The tie-in walls were revised to accommodate the new "station-to-station" closure structure design.

7. Solomon Creek Stormwater Pumping Station

The entire pump station superstructure was removed and replaced due to deterioration and major structural cracks.

8. Wadham Creek Stormwater Pumping Station

Sanitary pump, motor, sluice and flap gates were rehabilitated and/or replaced and brought back into service. The landside of the relief culvert channel was rehabilitated and a low flow wall was added to direct flows to one side of the culvert, under normal conditions.

9. Brown Creek Stormwater Pumping Station

Two pump discharge pipes, a sanitary pump discharge pipe, and a sanitary gravity outfall pipe were grouted shut. Two 9-foot diameter pipe culverts were grouted shut and one pipe culvert was reduced to 3-foot diameter. A new landside sluice gate was installed through the line of protection. The pumping station parking area was re-graded and covered in crushed stone.

10. Horton Street Stormwater Pumping Station

Existing pavement in the parking area was removed and replaced with crushed stone.

6 Ongoing Projects Within the Wyoming Valley

Following the finalization of the Phase II General Design Memorandum in February 1996, construction on the Wyoming Valley Levee Raising project began in spring 1997, and was projected to require 5 to 7 years to complete. The Exeter section was completed in 1998. Construction in Kingston-Edwardsville, Swoyersville-Forty Fort, Wilkes-Barre and Hanover Township, and Plymouth followed. As of January 2003, flood protection is complete for the entire 15-mile stretch. Figure 3 provides reference locations each of these communities.

7 Reasonably Foreseeable Future Actions

Local officials and planners were contacted to identify other recreation projects planned for the study area during the period of analysis. Luzerne County and Wilkes-Barre officials are exploring funding opportunities to integrate the riverfront and downtown with the National Park Service's Delaware and Lehigh National Heritage Corridor.

Projects under development include renovation of the Irem Temple Building to tie into the Irem Temple Landing and development on the levee side of River Street. The Irem Temple would likely house an art and/or history museum. Located on a parcel extending from North River Street to North Franklin Street, the Irem Temple building is one of Wilkes-Barre's architectural landmarks.

Development of the historic Sterling Hotel along River Street in Wilkes-Barre is moving forward with possible plans for residential units and hotel accommodations. Traffic calming and beautification measures in cooperation with the Pennsylvania Department of Transportation along River Street are expected to increase accessibility to the river landing and park and draw visitors to the riverfront.

Upstream of the Market Street Bridge, there is an existing low stone wall that separates the gravel walk adjacent to Market Street from park lawn. This stone wall is deteriorating and will

be removed and replaced with a low concrete seat wall. In addition, the existing gravel walkway along North River Street will be paved, and an irrigation system will be installed in the park.

The road accessing the Luzerne County Courthouse off of River Street will also be re-aligned to intersect River Street directly across from Union Street. This modification will result in the removal of the existing paved surface and resurfacing approximately 600 linear feet of pavement with an approximate width of 25 feet.

The Ashley Planes Heritage Park is a planned 554-acre recreation area and education center that would stretch along State Route 309 from Ashley to the Solomon Gap area. The Earth Conservancy, Delaware and Lehigh National Heritage Corridor Commission, Pennsylvania Department of Transportation, and Rails to Trails are jointly developing the project. The planes are a series of very steep, inclined train rails on which coal was carried from the Wyoming Valley for transport along the Lehigh River canal system until the middle of the 20th century. Construction of hiking/biking trails, a cultural center and parking areas is expected to begin in approximately 3 years. Plans include a proposed linkage to the Delaware and Lehigh National Heritage Corridor Trail. Project planners estimate annual visitation would be approximately 15,000 to 25,000 persons.

Additional projects further from the project site include: a highway extension (Route 115 Connector) into Luzerne County's Tubs Natural Area; revitalization of the Kingston Waterfront Park; completion of the Pittston riverfront project and trail connecting to the Luzerne County Courthouse; a trail system from Wilkes-Barre to Harvey's Lake at Back Mountain; and development of the Susquehanna Warrior Trail.

Luzerne County Flood Protection Authority is investigating the construction of an inflatable dam in the Susquehanna River near downtown Wilkes-Barre. The Luzerne County Flood Protection Authority may build an inflatable dam; however, it is not clear whether the project could be permitted or feasible. The work described in this SEIS does not rely on the inflatable dam for feasibility.

Were it constructed as currently envisioned, a dam 9.5 feet high would create a seasonal lake that would begin 200 feet upstream of the location of the former D&H Railroad Bridge, which is located downstream of the Riverfront Park site. The pool of water would be present from approximately May to October, extend upstream about 4.5 miles and would have a surface area of between 400 and 600 acres. Kirby Park, Nesbitt Park, Riverbend Park, the downstream end of the Luzerne County Recreational Facility, and the Riverfront Park site would all abut the shoreline of the river with the inflatable dam in place. When the dam was inflated, the water surface elevation near Market Street would be approximately four feet higher than the normal elevation of the river. The higher water surface elevation of the summer pool (approx. four feet) would not affect the river landing and fishing platform/dock as final design of these features would account for the normal rise and fall of the river levels that exceed the four-foot level predicted for the inflatable dam pool. The average depth of the lake would be approximately eight to 10 feet. The dam could be lowered quickly and would not be an obstacle to flood waters in the event of a storm. The dam is in the planning stage and investigations regarding environmental impacts and feasibility are ongoing. The Riverfront Park would be expected to benefit from increased visitation if the dam were constructed in the future.

8 Summary of Environmental Effects

8.1 Unavoidable Adverse Environmental Impacts

Unavoidable adverse environmental impacts related to feature construction are a function of temporary noise increase, fugitive dust, increased truck traffic, loss of aquatic habitat by expanding the berm for the river landing, and the removal of some mature trees and low quality woody vegetation at the Susquehanna River's edge. There would also be a temporary increase in turbidity and disturbance of sediments from the construction of the river landing and the construction and removal of the rock groins.

Unavoidable adverse environmental impacts related to post construction use of the area would include large event related increases in litter and debris, vehicle traffic, lack of parking, pedestrian traffic, and noise related to festivals or concerts.

8.2 Short-Term Use and Long-Term Productivity of the Environment

Implementation of any of the alternatives would cause some very minor adverse impacts to the environment and would permanently commit certain resources. Adverse impacts to the environment would be of short duration and would be offset by the long-term recreational, aesthetic, and economic enhancements to Wilkes-Barre and the region. The long-term productivity of the environment would not be compromised with this relatively small development within the context of an urban waterfront.

8.3 Irreversible and Irretrievable Commitment of Resources

Irreversible and irretrievable resource commitments are related to use of resources and the effects that consumption or permanent loss or commitment of those resources would have on future generations. Irreversible commitments occur as a result of use or destruction of a resource (e.g., fossil fuels) that cannot be replaced. Irretrievable resource commitments involve the loss in value of an affected resource.

Irreversible and irretrievable commitments of resources would be limited to much of the basic construction materials to develop the features and fossil fuels used to operate equipment during the construction process. Some other resources and material that would be used under each alternative could be recycled (e.g., sheetpile, rip-rap) and do not represent an irreversible and irretrievable commitment.

The small areas of habitat that would be removed near the amphitheater and stage are not considered irreversible because if not maintained, these areas would revert to the exact appearance and character within three to five years.

8.4 Mitigation Measures

Recognizing the need to minimize the potential effects of construction activities, the Corps of Engineers has developed a Construction Guide Specification for Environmental Protection, CEGS-01355 (USACE, 2000a). This guide specification establishes the requirements for environmental protection during construction activities and adherence to the guide specification ensures construction activities are carried out with a minimum of environmental effects.

The direct, indirect, and cumulative effects predicted as a result of constructing the features and thereafter using the facilities are not significant enough to merit compensatory mitigation. However, with the loss of benthic habitat from the riverward expansion of the river landing, the creation of fish habitat groins (as described in Section 2.2.2.1) and leaving the base layer of the groins after deconstruction would improve the benthic habitat to be attractive to benthic invertebrates, minnows, and predatory fishes.

There would be no loss of wetland habitat; no significant increases in noise, traffic, or other similar parameters; and predicted air emissions are substantially below conformity thresholds. The mitigation of environmental impacts has been through avoidance (see design change discussion for the amphitheater in section 2.5.2) and the implementation of best management practices.

9 Public Involvement

9.1 Scoping Process

As required by NEPA, CEQ NEPA-implementing regulations (40 CFR 1500-1508), and the Army Corps Procedures for Implementing NEPA (ER 200-2-2), the Baltimore District, U.S. Army Corps of Engineers conducted a public scoping process consistent with the procedural requirements of NEPA. The Corps published a Notice of Intent (NOI) in the Federal Register (Federal Register, 2002) inviting comment on the scope of the SEIS and announcing a public meeting where oral comments would be received. The Corps solicited comments and held the public scoping meeting on November 6, 2002, at the Kings College Burke Auditorium in the McGowan Building, on the corner of River and Union Streets in Wilkes-Barre.

Interested agencies, public representatives, local and regional stakeholders, and the general public were encouraged to provide input in identifying areas of concern, issues and impacts to be addressed in the Draft SEIS, and the alternatives that should be analyzed. The Corps of Engineers invited full public participation to promote open communication and better decision-making and assistance was offered to anyone having difficulty with learning how to participate.

The formal opportunities for public participation include: (1) the public scoping meeting held November 6, 2002; (2) anytime during the NEPA process via mail, telephone or e-mail; (3) during the 45-day comment period on the Draft SEIS—approximately *August to September, 2004*; and, (4) review of the Final SEIS —*January/February, 2005*. Schedules and locations for

the future public meetings would be announced in local news media. Interested parties may also request to be included on the mailing list for public distribution of meeting announcements and documents.

9.2 Major Issues Identified for Analysis During Scoping

Many of the public scoping comments presented views and concerns not related to the scope or content of the proposed action and alternatives. Examples of these comments include statements in general support for or general opposition to the proposed project, criticism of the overall levee system and ongoing levee raising project, requests to consider changes to the structural alignments of existing flood protection outside of the project area, and support or criticism of other possible nearby projects such as the Irem Temple renovations, Sterling Hotel renovations, or the Luzerne County Flood Protection Authority inflatable dam project. The Corps considered and recorded these concerns, but has not included analyses of these issues in the Draft SEIS.

The Corps received several comments germane to aspects of the proposed action that are being considered in the development of the proposed action and alternatives. In response to the public comments, the Corps has included discussions and analysis of these issues in the Draft SEIS.

Summarized below, the following issues are presented in no particular order.

- Any revegetation or landscaping after construction is completed should be done in a "natural state," using flora that would naturally occur in the Susquehanna River floodplain (recommended mountain laurel, dogwood, and birch).

- The project should use a minimum of concrete to maintain as natural an appearance as possible.

- An economic and taxpayer impact study should be completed as part of the evaluation.

- Plantings after construction should include signage with common and scientific names.

- Safe pedestrian access and egress should be evaluated given very busy River Street.

- Consider traffic restrictions for trucks and busses on River Street/Riverside Drive.

- Include a merry-go-round or children's playground within the waterfront park.

- There are no real parks that children, families, and school groups can enjoy outside of their campuses and backyards.

- Design should consider nearest access to public restroom facilities and parking or shuttles for events.

- Historically there was a glass building on the River Commons near the Luzerne County Courthouse that should be examined for reconstruction to preserve the historic district.

- Recreation on the river should be limited to passive recreation (i.e., vessel use of the river should be limited to paddle boats and sail boats only with no power boats).

- Safety considerations should be made because deer and duck hunting are allowed in Kirby/Nesbitt natural areas across the river potentially endangering the public.

10 Figures

Figure 1. Regional Location

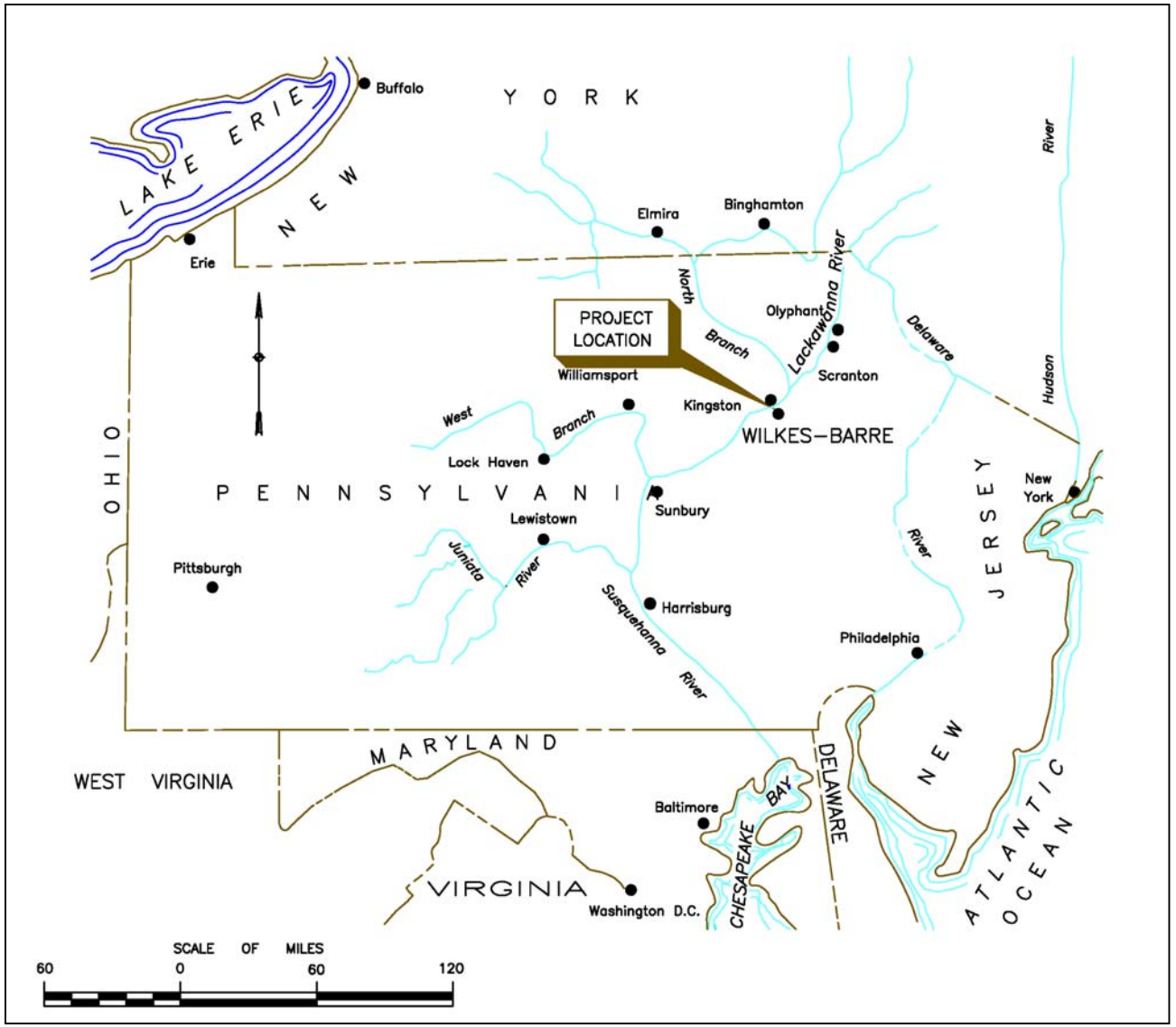


Figure 2. Waterfront Location

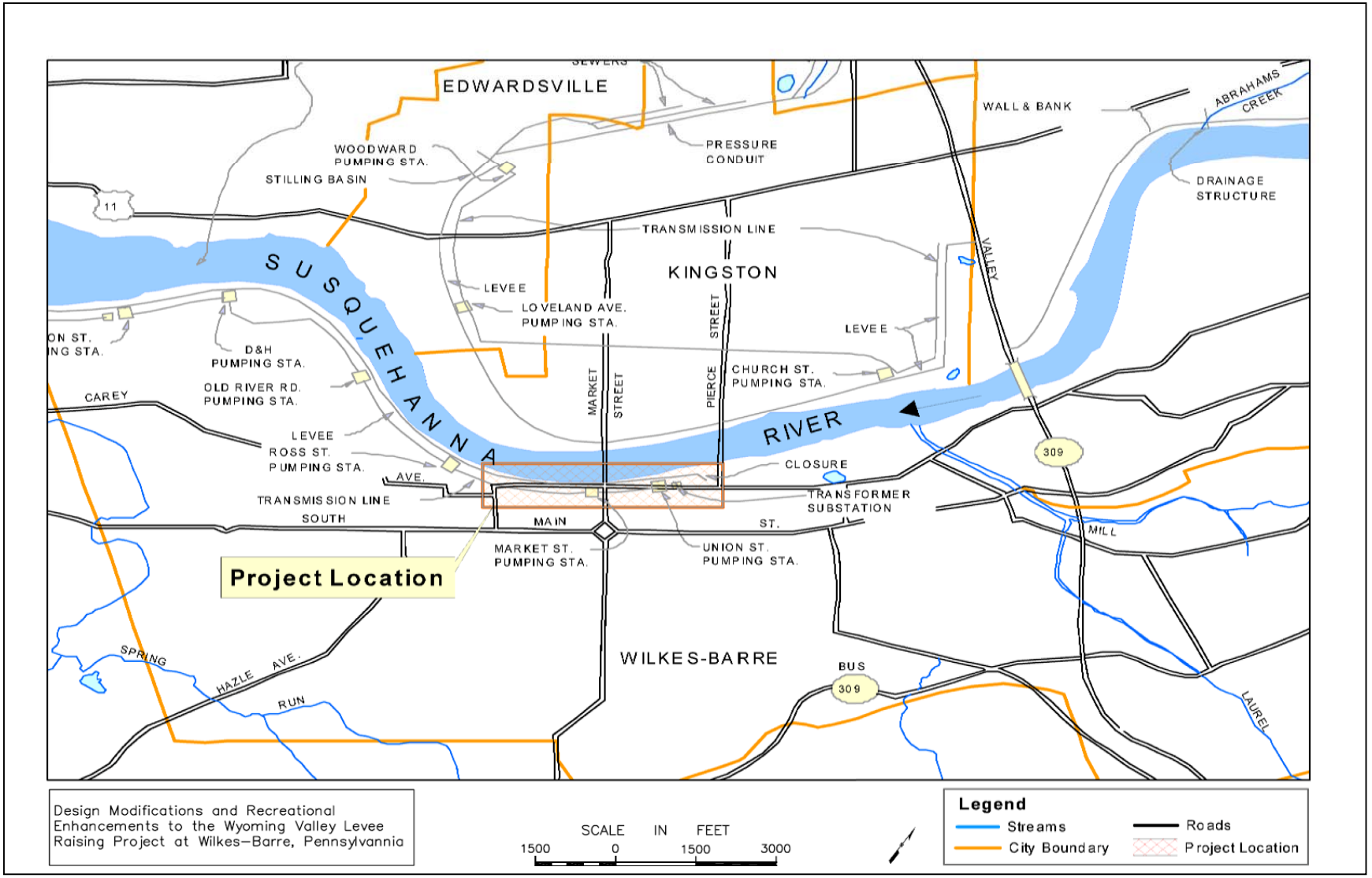


Figure 3. Levee Raising Project Plan

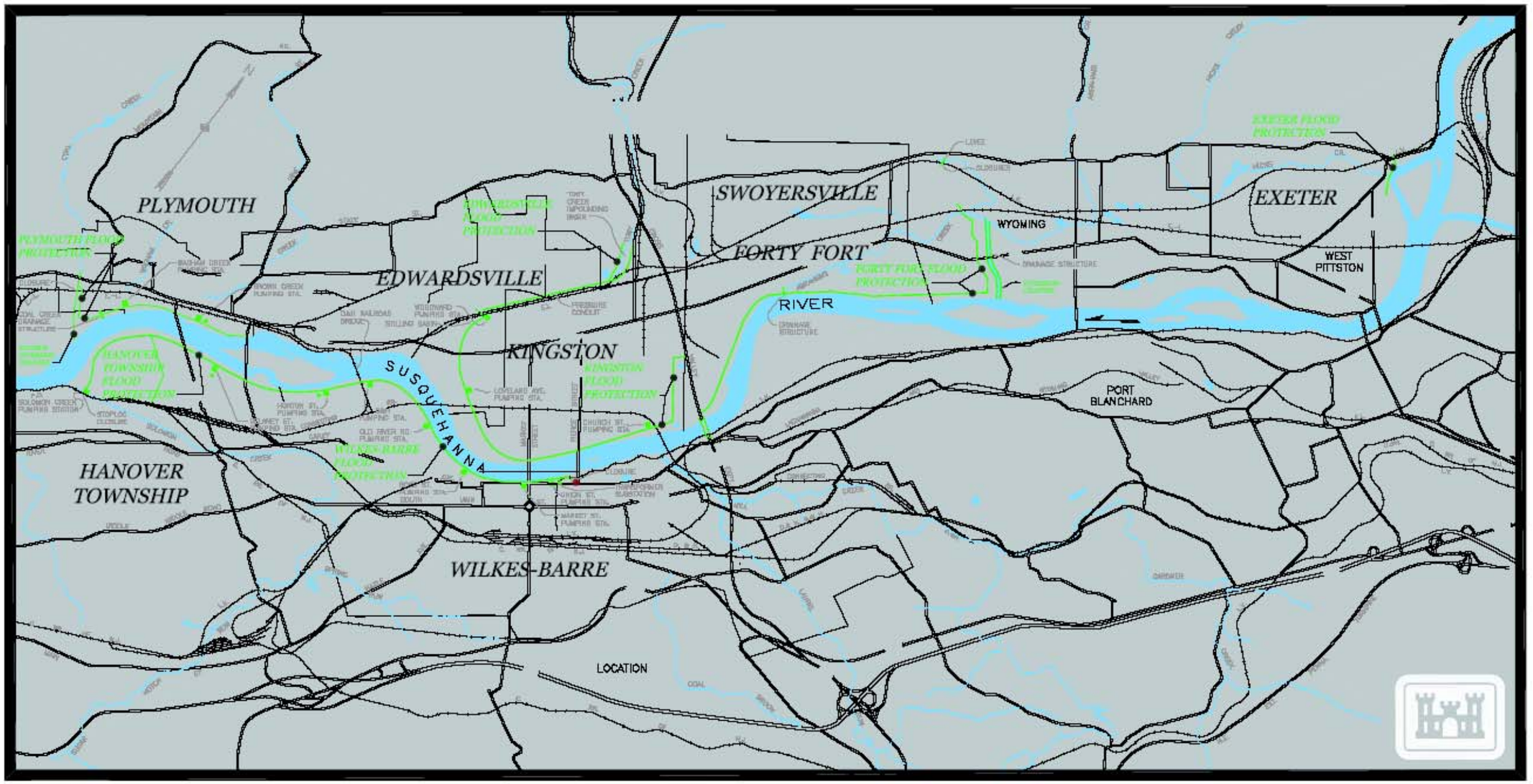


Figure 4A Upstream Project Features

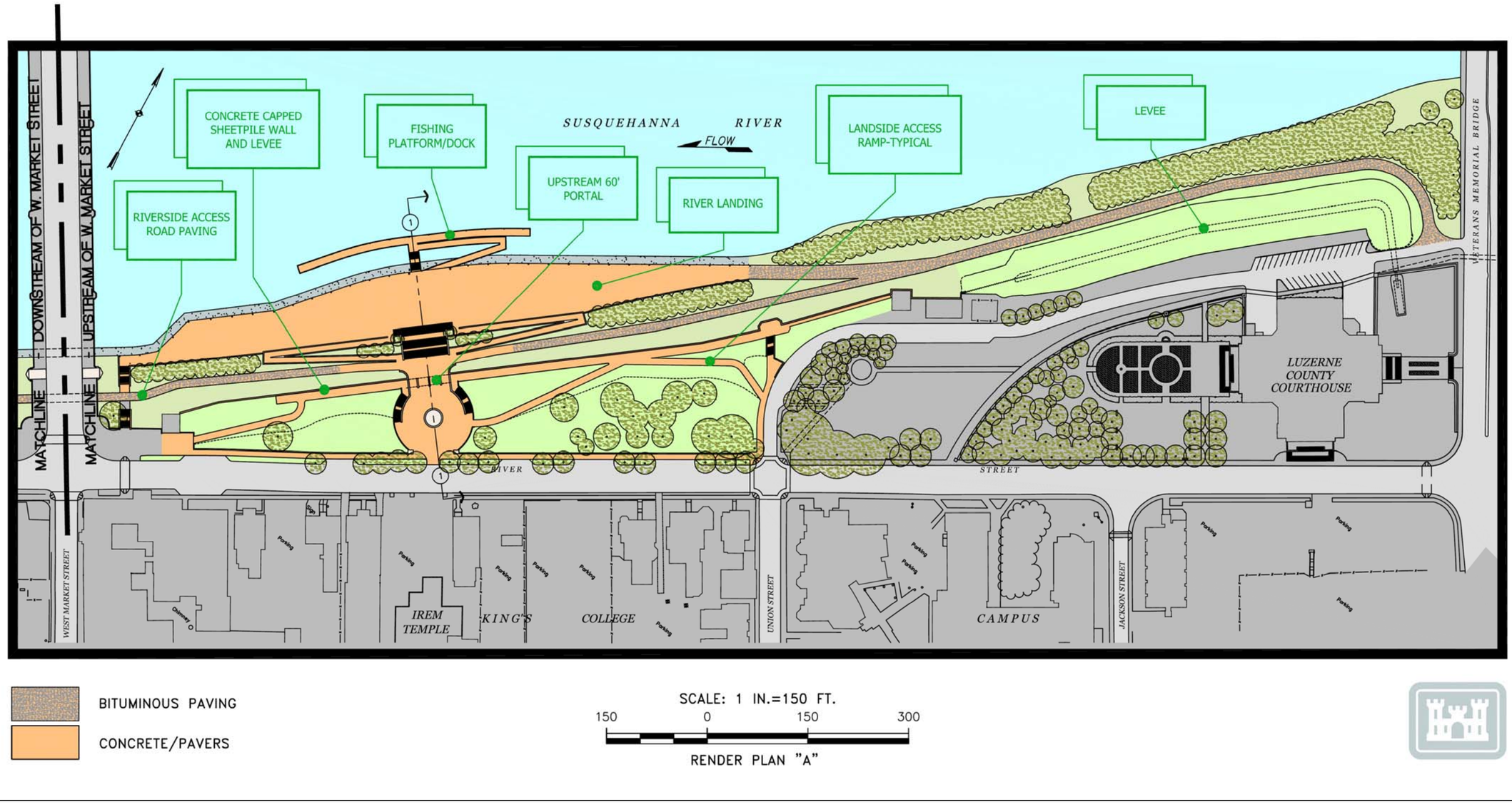


Figure 4B Downstream Project Features

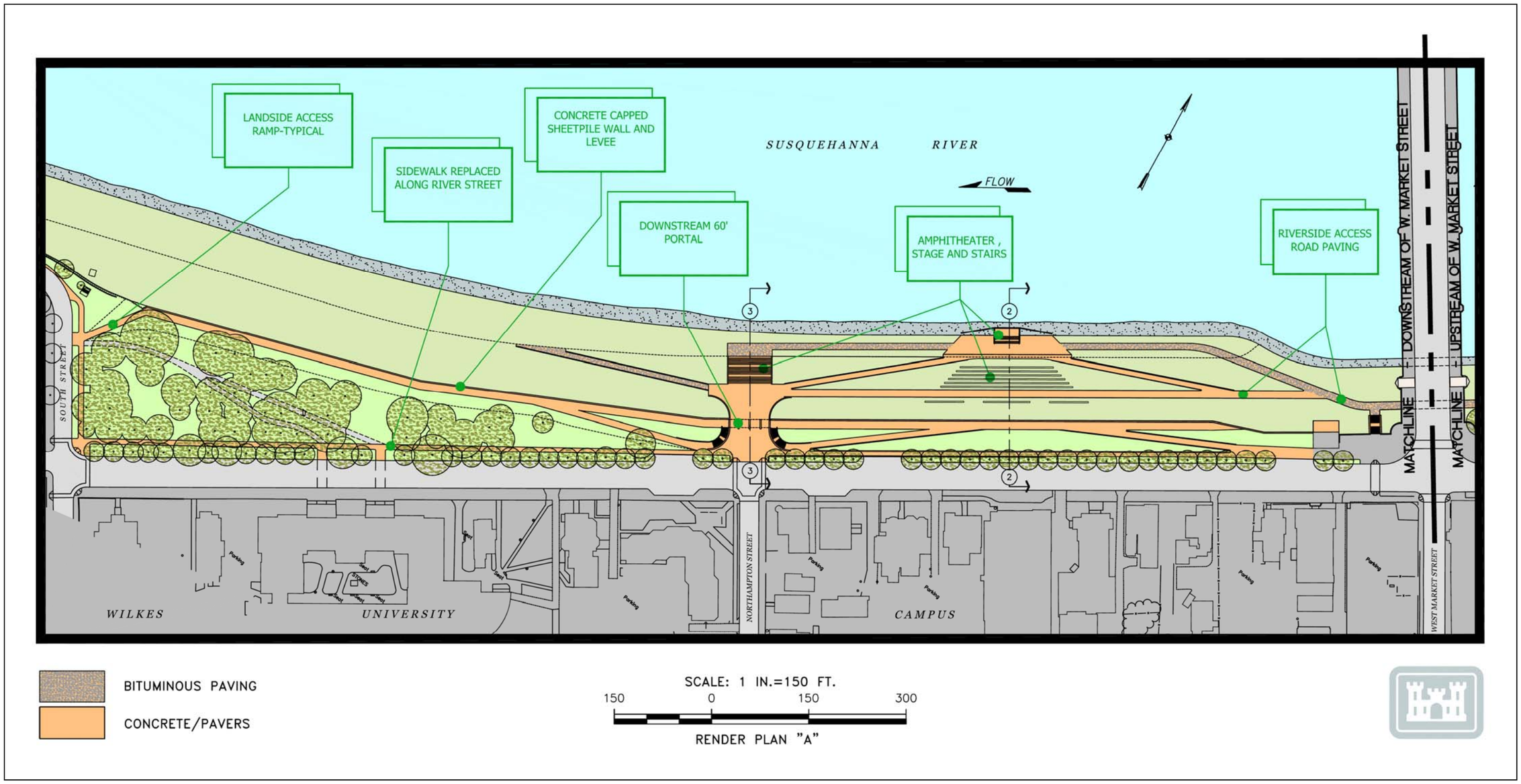


Figure 5 Fishing Platform/Dock and River Landing Cross Section

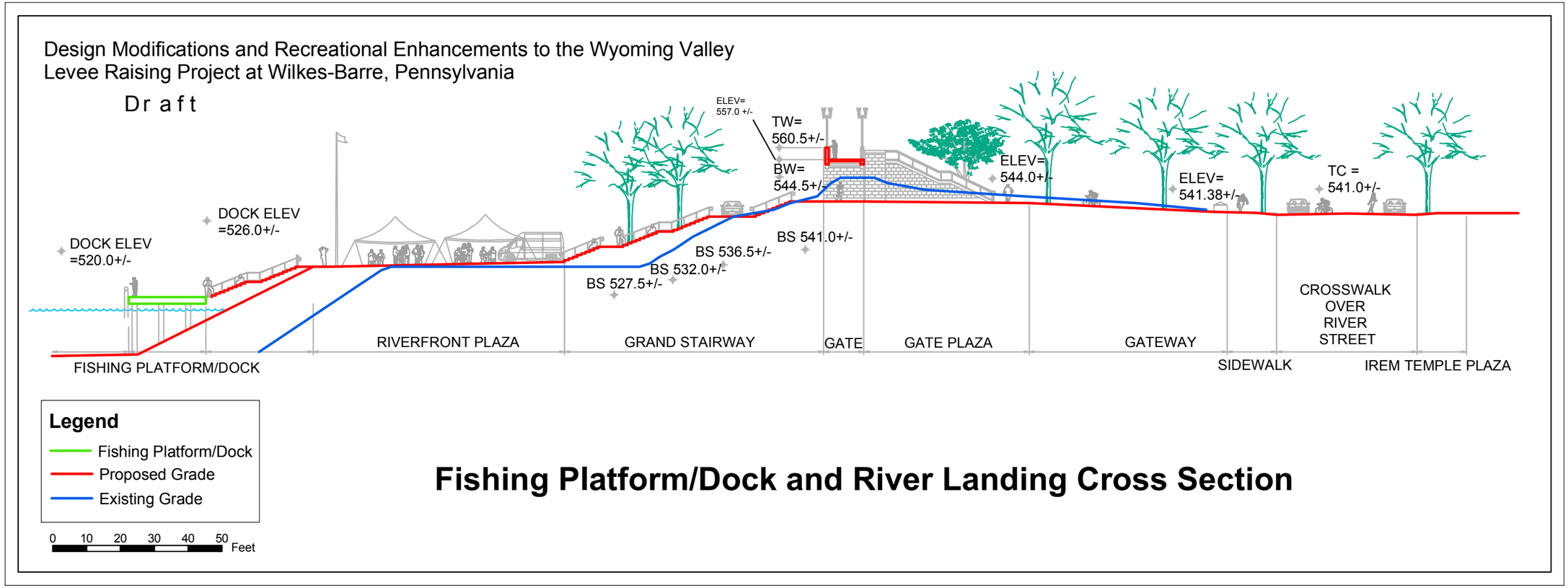


Figure 6 Amphitheater and Stage Cross Section

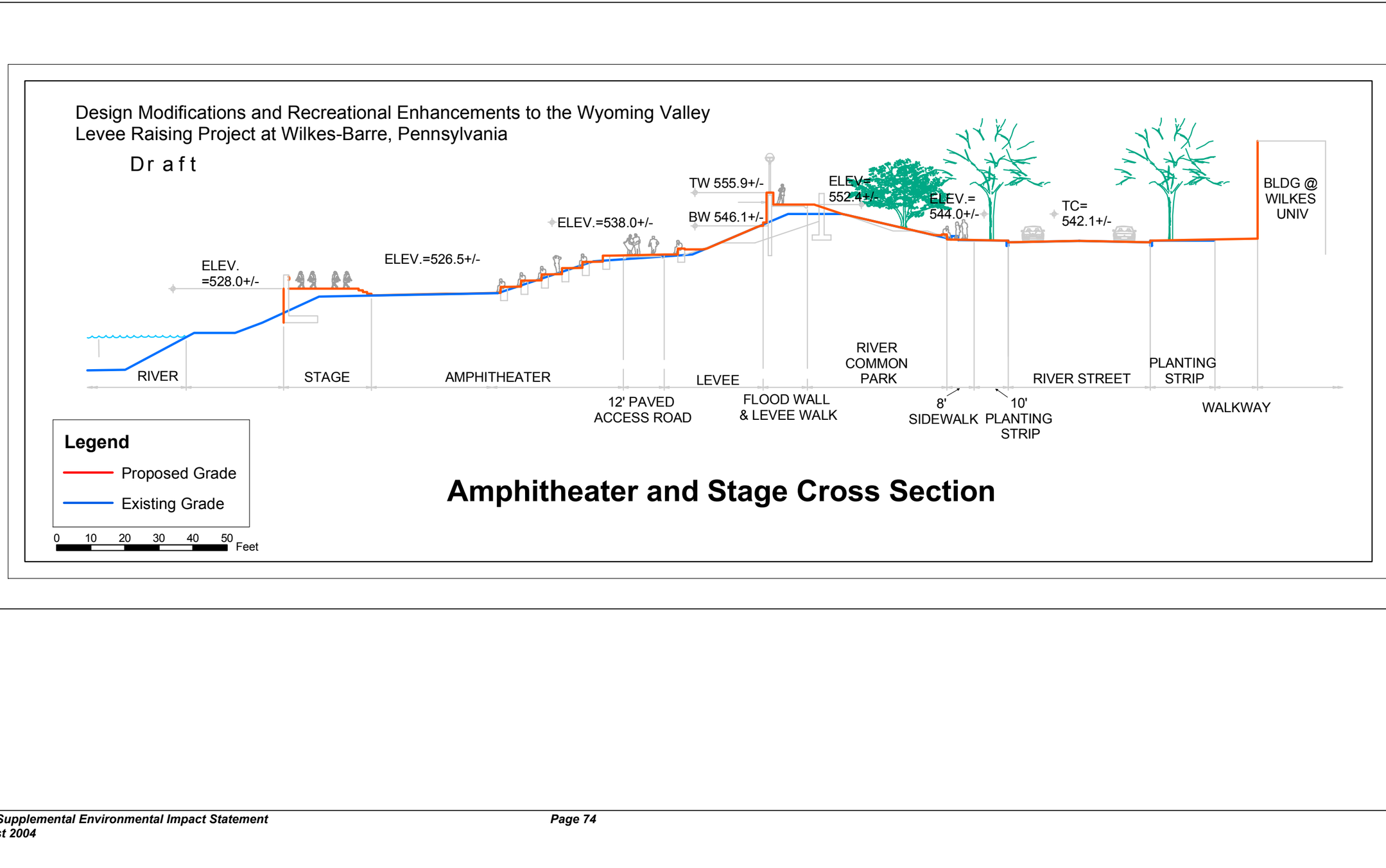
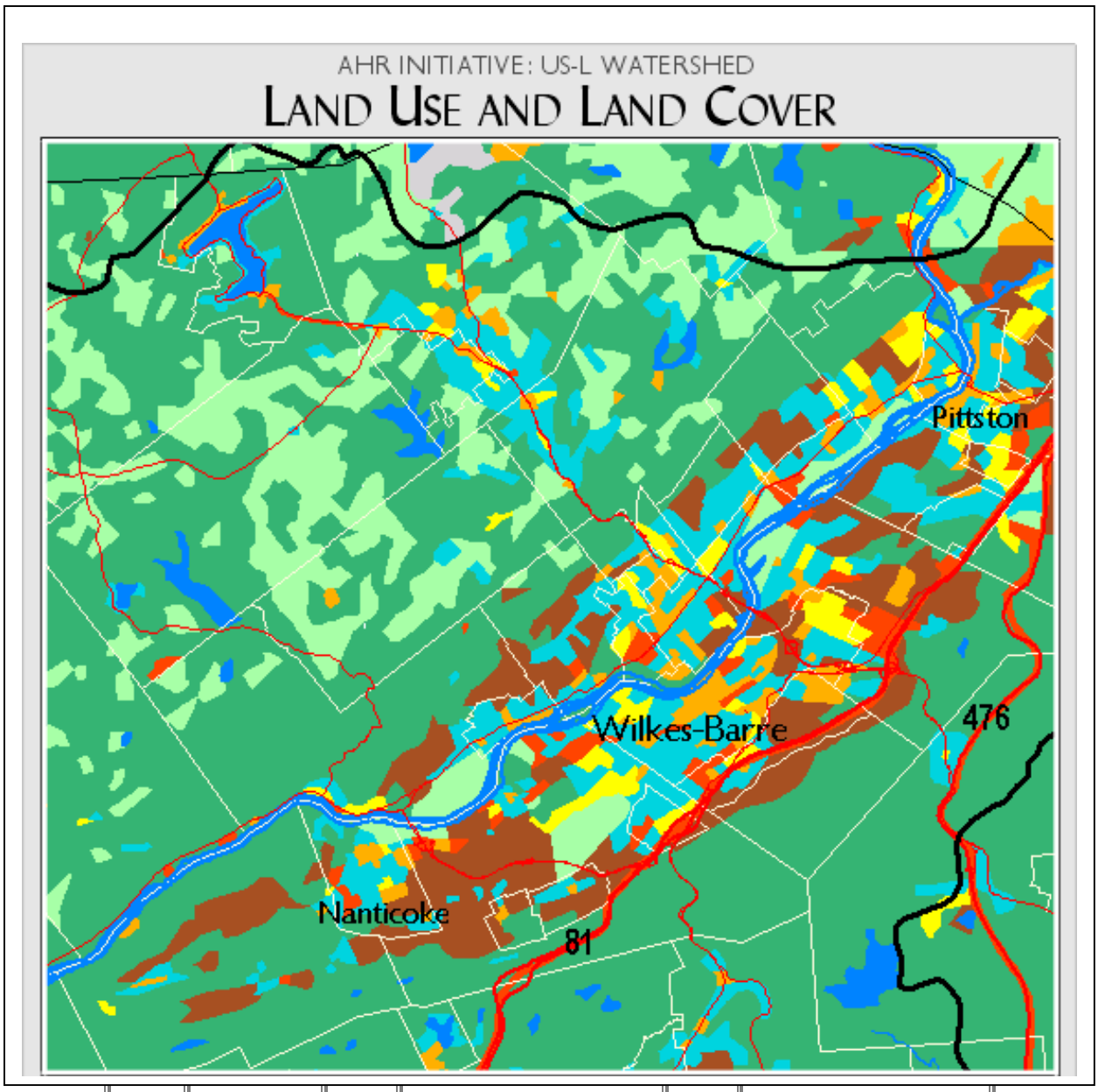
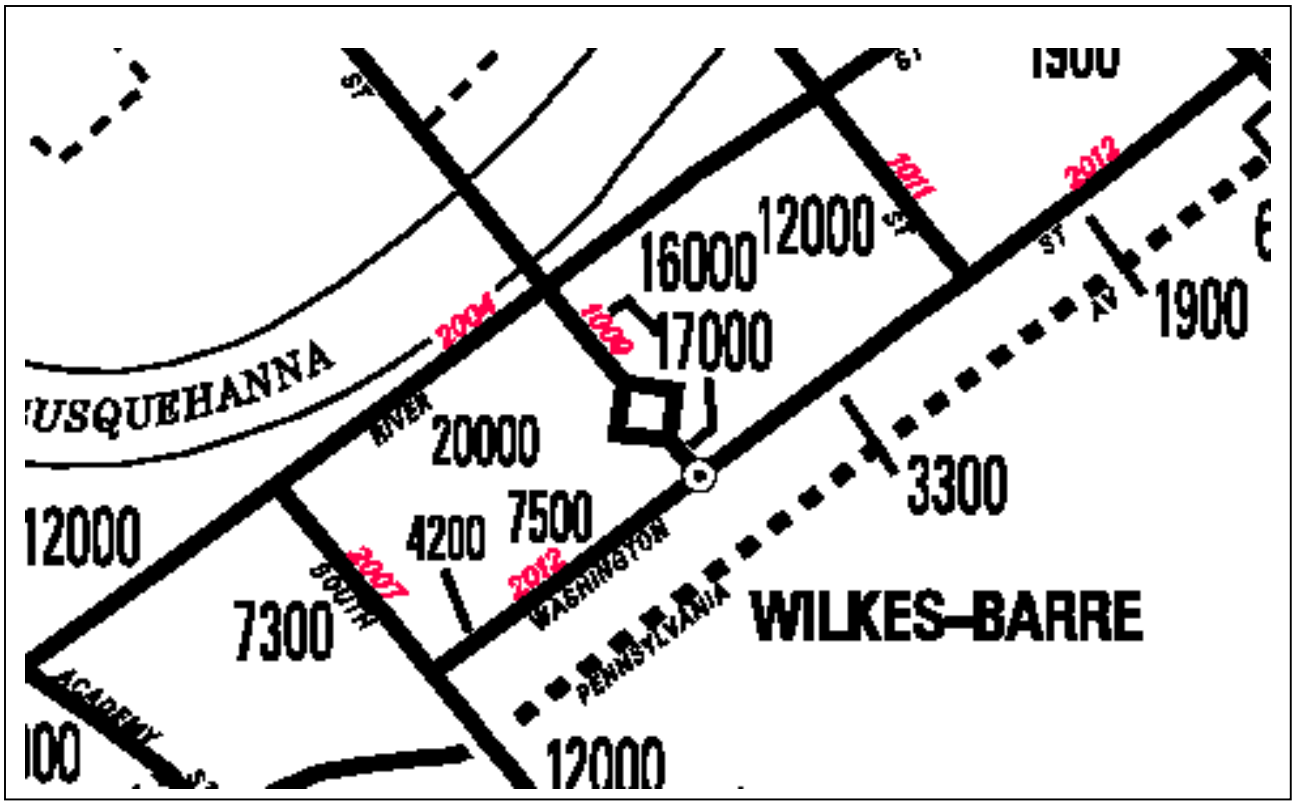


Figure 7 Land Use and Land Cover



	Residential		Commercial		Industrial
	Mixed Urban		Agricultural/Undeveloped		Forest Land
	Water		Wetland		Mined/Transitional Area

Figure 8. Average Daily Traffic Counts for Wilkes-Barre Waterfront



Source: PADOT, 2000

11 List of Preparers

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12 Distribution List

This distribution list includes only government representatives or those agencies that have jurisdiction by law or special expertise with respect to any environmental impact involved and any appropriate Federal, State, or local agency authorized to develop and enforce environmental standards. Copies of this Draft SEIS are also being sent to the public that requested a copy even though their names and addresses are not listed here.

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http://clubs.homeearth.com/GWVAS/DamCommentsFolder/damcomspecies.html

14 Organizational Conflict of Interest Representation Statement

NEPA FINANCIAL DISCLOSURE STATEMENT FOR PREPARATION OF U.S. ARMY CORPS OF ENGINEERS ENVIRONMENTAL IMPACT STATEMTENTS

Council on Environmental Quality Regulations at 40 CFR 1506.5 (c), which have been adopted by the U.S. Army Corps of Engineers (ER 200-2-2), require contractors who will prepare an EIS to execute a disclosure specifying that they have no financial interest or other interest in the outcome of the project. The term "financial or other interest in the outcome of the project" for purposes of this disclosure is defined in the March 23, 1981, guidance, Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations," 46 Federal Register. 18,026 - 18,038, Questions 17a and 17b.

"Financial or other interest in the outcome of the project" includes "any financial benefit such as a promise of future construction or design work in the project, as well as indirect benefits the contractor is aware of (e.g., if the project would aid proposals sponsored by the firm's other clients)," 46 Federal Register. 18,031.

In accordance with these requirements, the undersigned hereby certifies that the company and any of its proposed subcontractors have no financial or other interest in the outcome of the above named project.

_____ _____

Date

Signature

David Miller

Name

President

Title

David Miller & Associates, Inc.

Company

15 Appendices

Appendix A: Notice of Intent

Federal Register / Vol. 67, No. 206 / Thursday, October 24, 2002 / Notices 65343

DEPARTMENT OF DEFENSE

Department of Army; Corps of Engineers

Intent To Prepare a Draft Supplemental Environmental Impact Statement for the Design Modifications and Recreational Enhancements to the Wyoming Valley Levee Raising Project at the Wilkes-Barre, PA Historic River Commons

AGENCY: Department of the Army, Army Corps of Engineers, DoD.

ACTION: Notice of intent.

SUMMARY: Pursuant to the National Environmental Policy Act (NEPA), the U.S. Army Corps of Engineers (Corps), Baltimore District, will prepare a Draft Supplemental Environmental Impact Statement (DSEIS). The DSEIS will evaluate the potential impacts to the natural, physical, and human environment resulting from the proposed Design Modifications and Recreational Enhancements to the Wyoming Valley Levee Raising Project at the Wilkes-Barre, PA Historic River Commons. The project goal is to reconnect Wilkes-Barre's urban district to the Susquehanna River reclaiming the river as a civic resource for the daily life of the inhabitants and visitors and making the river an identifying topographic symbol of the city.

The DSEIS will include documentation of baseline conditions, an evaluation of the no action alternative, and an evaluation of the proposed project features and associated impacts. The features to be evaluated for the proposed project include two portals (i.e., pedestrian gates) through the levee, a river landing, a boat dock/pier, and an amphitheater. Details concerning these features are provided in Section 4 below.

DATES: A public scoping meeting is scheduled for November 6, 2002, at 7 p.m., Kings College Burke Auditorium in the McGowan Building, on the corner of River and Union Streets in Wilke-Barre.

ADDRESSES: Send written comments and suggestions concerning the scope of the DSEIS, requests to speak at the public scoping meeting, or special requests to enable participation at the scoping meeting (e.g., interpreter for the hearing-impaired) to: Amy M. Guise, CENAB–PL, U.S. Army Corps of Engineers, Baltimore District, 10 South Howard Street, P.O. Box 1715, Baltimore, MD, 21203–1715. Telephone (410) 962–2941 or Electronic Mail: *amy.m.guise@usace.army.mil.* Requests to be placed on the mailing list or receive a copy of the DSEIS should also be sent to this address.

FOR FURTHER INFORMATION CONTACT: To obtain additional information about the proposed project, contact Patricia Coury, CENAB–PL, U.S. Army Corps of Engineers, Baltimore District, 10 South Howard Street, P.O. Box 1715, Baltimore, MD, 21203–1715. Telephone (410) 962–2668 or Electronic Mail: *patricia.coury@usace.army.mil.*

SUPPLEMENTARY INFORMATION:

1. Public Participation

a. The Corps will conduct a public scoping meeting (see **DATES**) to gain input from interested agencies, organizations, and the general public concerning the content of the DSEIS, issues and impacts to be addressed in the DSEIS, and alternatives that should be analyzed.

b. The Corps invites full public participation to promote open communication and better decision-making. All persons and organizations that have an interest in the Design Modifications and Recreational Enhancements to the Wyoming Valley Levee Raising Project as they affect the community of Wilkes-Barre, Pennsylvania and the affected environment are urged to participate in this NEPA environmental analysis process. Assistance will be provided upon request to anyone having difficulty with learning how to participate.

c. Public comments are welcomed anytime throughout the NEPA process. Formal opportunities for public participation include: (1) The public scoping meeting to be held near the project site; (2) anytime during the NEPA process via mail, telephone or e-mail; (3) during the 45-day comment period on the Draft Environmental Impact Statement—approximately April to May, 2003; and, (4) review of the Final SEIS—August/September, 2003. Schedules and locations will be announced in local news media. Interested parties may also request to be included on the mailing list for public distribution of meeting announcements and documents. (See **ADDRESSES**).

d. To ensure that all issues related to the proposed project are addressed, the Corps will conduct an open process to define the scope of the DSEIS. Recommendations from interested agencies, local and regional stakeholders and the general public are encouraged to provide input in identifying areas of concern, issues and impacts to be addressed in the DSEIS, and the alternatives that should be analyzed. Scoping for the DSEIS will continue to build upon the knowledge and information developed by the Corps' investigations of flooding in the Wyoming Valley and the Susquehanna River basin.

e. Environmental issues will focus on, but are not limited to, effects on air quality, wetlands, water quality; fish and wildlife resources (including threatened and endangered species); hazardous, toxic, and radioactive waste; traffic; aesthetic resources; and cultural resources (including archaeological sites and historic architecture). The team will evaluate the environmental impacts (both adverse and beneficial) of the proposed actions.

2. Background

a. In 1999, the Luzerne County Flood Control Authority sponsored a citizens' participatory planning workshop to develop a community-based concept plan for the downtown Wilkes-Barre Susquehanna riverfront. This workshop culminated in a recommendation to the Authority that addressed how to develop the Wilkes-Barre Historic River Commons waterfront near the Market Street Bridge. The River Commons is part of the River Street Historic District and was listed on the National Register of Historic Places in 1980. Established in the 18th Century as the Central locale for the town, the River Commons is the area where both Fort Wyoming and Wilkes-Barre Fort were most likely located.

b. Based on the input, the Authority retained the services of a consultant to take the community's recommendations and develop them into a conceptual plan with preliminary drawings and a preliminary cost estimate. The project covers approximately 25 acres and runs over 4,200 feet from South Street at the west end at the Wilkes University campus to the Veterans Memorial Bridge and Luzerne County Courthouse near Kings College at its east end.

c. The Luzerne County Flood County Authority requested the Wilkes-Barre Riverfront Plan be added to the Wilkes-Barre section of the ongoing Wyoming Valley Levee Raising Project. Congressman Kanjorski also contacted the Corps requesting an evaluation of whether the features identified in the Riverfront Plan could be incorporated into the ongoing project. The Corps confirmed that they had the authority to undertake several of the proposed provisions, provided that they were technically feasible, environmentally acceptable, and economically justified.

3. Purpose and Need

a. The ongoing Wyoming Valley Levee Raising Project will project protection

against flood flows that would be caused by a reoccurrence of Tropical Storm Agnes (June 1972). The project consists of raising existing levees and floodwalls between three and five feet; modifying closure structures, drainage structures, and pump stations; relocating utilities; adding minor recreation facilities; and providing some new levees, closure structures, and floodwalls to maintain the integrity of the existing flood control system.

b. The Wyoming Valley Levee Raising Project's 1996 Phase II General Design Memorandum/Environmental Impact Statement recognized that there would be detrimental impacts to communities where flood protection passed through residential and commercial areas. Where possible, the levee raising design was to be sensitive to aesthetic, recreation, and environmental consideration. Contemporary Corps' projects incorporate a number of design features within urban areas to minimize the effects of large flood control projects on urban waterfronts. The purpose of modifying the Levee Raising Project through the Historic River Commons is to reconnect Wilkes-Barr's downtown to the Susquehanna River. These modifications will help reclaim the river as a civic resource for the daily life of residents and visitors and to make the river a unique amenity for the city.

4. Proposed Action and Alternatives

a. The proposed action is to modify flood damage reduction structures (*e.g.,* floodwall, levee, *etc.*) along the downtown Wilkes-Barre waterfront featuring more current urban flood protection design practices, methods, and materials. The features being considered for the proposed action include:

(1) Upstream Portal—An approximately 60-foot wide and 12-foot high upstream portal through the levee and a bridge above would provide pedestrian and emergency access to the Susquehanna River just upstream of the Market Street Bridge at the same grade as the Historic River Commons. During a flood event the portal would be closed with flood gates.

(2) Downstream Portal—An approximately 60-foot wide and 12-foot high downstream portal across from the Northampton Street and River Street intersection that would provide similar pedestrian and emergency access to the Susquehanna River. During a flood event the portal would also be closed with flood gates.

(3) River Landing—Upstream of the Market Street Bridge, a River Landing would be constructed upon the existing stability berm (approximately 900 feet long x 70 feet wide) that was previously constructed in 1999. When completed, this River Landing would create a concrete-surfaced, 1.2-acre riverfront plaza for people to congregate for waterfront events (*e.g.,* concerts, 4th of July fireworks, art shows, ethnic food festivals, *etc.*). A series of bollards, or similar structures, at the edge of the River Landing would provide for pedestrian safety. The River Landing would require limited re-grading, reconfiguring, and a riverside expansion of the rock stability berm to accommodate the necessary features.

(4) Pier/Dock—Connected to the River Landing would be a 340-foot long and 12-foot wide boating/fishing pier. Access to the pier would be via a fixed ramp directly from the River Landing. The dock itself would not have permanent boat slips, but would have adequate fendering to provide a location where boats could temporarily tie-up for a few hours at a time (public landing). The feature would compliment the existing boat launch in Nesbitt Park, across the river in Kingston, by providing additional areas for public access for fishing and recreational boating.

(5) Amphitheater and Stage—The amphitheater and stage would be constructed just downstream of the Market Street Bridge but upstream of the Downstream Portal. The amphitheater would consist of large stones or reinforced concrete blocks placed into the slope to provide bench seating for approximately 750 people. One row of seats would be above the existing riverside access road and the majority of the rows would be below the riverside access road grade. The performance stage would be built of sheetpile and concrete slightly above the existing grade near the river's edge.

(6) Paving Riverside Access Road—At the completion of the levee raising and the Riverfront Plan, the riverside access road at the base of the riverside of the levee would be paved as an element to the riverfront development plan. The paving of this road would be an improvement for recreational purposes and provide a biking/jogging/walking trail along the riverside toe of the levee.

(7) Miscellaneous Recreational Accoutrements—The flood control project—as designed and constructed throughout the Wyoming Valley—includes recreational features in the basic design. This reach of the Wilkes-Barre levee would include similar recreational features such as lights, seating areas with benches, trees/vegetation, educational kiosks, and trash receptables.

b. Alternatives for Evaluation. (1) The DSEIS will describe and assess the following 5 alternatives: No Action; Portals Only; Portals and River Landing; Portals, River Landing, and Boat Dock/Pier; Portals, River Landing, Boat Dock/Pier, and Amphitheater; and Stage.

(2) These alternatives, along with no action, will be the alternatives the Corps initially proposes to evaluate in the DSEIS. As necessary, reasonable alternatives that may become apparent as the evaluation proceeds will be addressed.

(3) The Miscellaneous Recreational Accoutrements and Paving of the Riverside Access Road will be evaluated in the DSEIS, but would be evaluated separately as actions to be conducted regardless of the alternative selected.

Luz D. Ortiz,

Army Federal Register Liaison Officer.

[FR Doc. 02–27156 Filed 10–23–02; 8:45 am]
BILLING CODE 3710–41–M

DEPARTMENT OF DEFENSE

Department of the Army; Corps of Engineers

Inland Waterways Users Board

AGENCY: Department of the Army, Army Corps of Engineers, DoD.

ACTION: Notice of open meeting.

SUMMARY: In accordance with 10(a)(2) of the Federal Advisory Committee Act (Pub. L. 92–463), announcement is made of the forthcoming meeting.

Name of Committee: Inland Waterways Users Board (Board).

Date: November 21, 2002.

Location: Tremont House Hotel, 2300 Ship's Mechanic Row, Galveston, TX (1–409–763–0300).

Time: Registration will begin at 7:30 a.m. and the meeting is scheduled to adjourn at 1 p.m.

Agenda: The Board will hear briefings on navigation projects administered by the U.S. Army Corps of Engineers, Galveston District.

FOR FURTHER INFORMATION CONTACT: Mr. Norman T. Edwards, Headquarters, U.S. Army Corps of Engineers, CECW–PD, 441 G Street, NW., Washington, DC 20314–1000; Ph: 202–761–4559.

SUPPLEMENTARY INFORMATION: The meeting is open to the public. Any interested person may attend, appear before, or file statements with the

Appendix B: Compliance With Environmental Statutes

Compliance of the Proposed Action with Environmental Protection Statutes and Other Environmental Requirements

Federal Statutes	Level of Compliance[1]
Anadromous Fish Conservation Act	N/A
Archeological and Historic Preservation Act	Full
Clean Air Act	Full
Clean Water Act	Full
Coastal Barrier Resources Act	N/A
Coastal Zone Management Act	N/A
Comprehensive Environmental Response, Compensation and Liability Act	Full
Endangered Species Act	Full
Estuary Protection Act	N/A
Federal Water Project Recreation Act	N/A
Fish and Wildlife Coordination Act	Full
Land and Water Conservation Fund Act	Full
Magnuson-Stevens Act	Full
Marine Mammal Protection Act	N/A
National Historic Preservation Act	Full
National Environmental Policy Act	Full
Resource Conservation and Recovery Act	Full
Rivers and Harbors Act	Full
Watershed Protection and Flood Prevention Act	Full
Wild and Scenic Rivers Act	N/A
Executive Orders, Memoranda, etc.	
Migratory Bird (E.O. 13186)	Full
Protection of Children from Health Risks and Safety Risks (E.O. 13045)	Full
Protection and Enhancement of Environmental Quality (E.O. 11514)	Full
Protection and Enhancement of Cultural Environment (E.O. 11593)	Full
Floodplain Management (E.O. 11988)	Full
Protection of Wetlands (E.O. 11990)	Full
Prime and Unique Farmlands (CEQ Memorandum, 11 Aug. 80)	N/A
Environmental Justice in Minority and Low-Income Populations (E.O. 12898)	Full

[1] Level of Compliance:
Full Compliance (Full): Having met all requirements of the statute, E.O., or other environmental requirements for the current stage of planning.
Partial Compliance (Partial): Not having met some of the requirements that normally are met in the current stage of planning.
Non-Compliance (NC): Violation of a requirement of the statute, E.O., or other environmental requirement.
Not Applicable (N/A): No requirements for the statute, E.O., or other environmental requirement for the current stage of planning.

Appendix C: Correspondence

From: Maria_Tur@fws.gov [mailto:Maria_Tur@fws.gov]
Sent: Tuesday, April 01, 2003 11:48 AM
To: Guise, Amy M
Subject: Wyoming Valley Levee Raising Project

To Amy Guise:
The U.S. Fish and Wildlife Service (Service) has reviewed Federal Register Notice Vol. 67, No. 206, dated Thursday October 24, 2002, Intent to Prepare a Draft Supplemental Environmental Impact Statement for the Design Modifications and Recreational Enhancements to the Wyoming Valley Levee Raising Project at the Wilkes-Barre, PA Historic River Commons.

The Service has no comment on the proposed modifications. If you have any questions, please call Maria Tur at (570) 894-1275. Thank you for the opportunity to comment.

Maria Tur

Commonwealth of Pennsylvania
Pennsylvania Historical and Museum Commission
Bureau for Historic Preservation
Commonwealth Keystone Building, 2nd Floor
400 North Street
Harrisburg, PA 17120-0093
www.phmc.state.pa.us

July 2, 2003

Wesley E. Coleman, Jr.
US Army Corps of Engineers
P.O. Box 1715
Baltimore, MD 21203-1715

SHP REFERENCE NUMBER

Re: File No. ER 81-0555-079-TT
COE: Proposed Modifications to
Wyoming Valley Levee Raising Project
City of Wilkes-Barre, Luzerne County

Dear Mr. Coleman:

The Bureau for Historic Preservation (the State Historic Preservation Office) has reviewed the above named project in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended in 1980 and 1992, and the regulations (36 CFR Part 800) of the Advisory Council on Historic Preservation. These requirements include consideration of the project's potential effect upon both historic and archaeological resources.

The properties listed below, listed in or eligible for the National Register of Historic Places, are located near the project area. In our opinion, the activity described in your proposal will have no effect on such resources. Should the applicant become aware, from any source, that unidentified historic or archaeological properties are located at the project site, or that the project activities will have an effect on these properties, the Bureau for Historic Preservation should be contacted immediately.

River Street Historic District

In our opinion no archaeological investigations are necessary in this project area.

If you need further information in this matter please consult Ann Safley at (717) 787-9121.

Sincerely,

K. W. Carr

Kurt W. Carr, Chief
Division of Archaeology &
Protection

KWC/tmw

Pennsylvania Department of Environmental Protection

2 Public Square
Wilkes-Barre, PA 18711-0790
February 19, 2003

Northeast Regional Office

570-826-2511
x 570-830-3016

NOT SIGNED

Ms. Patricia Coury
Team Leader, Civil Project Development Branch
Planning Division
Department of the Army
Baltimore District, Corps of Engineers
P.O. Box 1715
Baltimore, MD 21203-1715

Re: Design Modifications and Recreational Enhancements
Wyoming Valley Levee Raising Project
City of Wilkes-Barre, Luzerne County

Dear Ms. Coury:

I have been forwarded a copy of your letter, dated January 17, 2003, addressed to Mr. Larry Tropea of the PA Department of Environmental Protection, regarding the preparation of a Supplemental Environmental Impact Statement to assess the potential impacts of design modifications and recreational enhancements to the Wyoming Valley levee-raising project. Your letter invited preliminary comments regarding the proposed modifications/enhancements.

Based on the project description you provided, it appears that a Water Obstruction and Encroachment Permit may be required for some of the proposed components of the project. The permit application review process would consider the effects of the project on public safety, hydraulics of river flows, and the environment. Further details about the project, including ownership/responsibility for project elements and proximity of the activities to the 100-year floodplain and/or wetlands, would be needed in order for us to provide more specific guidance about permitting requirements.

Should you have any questions or need further information, please contact my office.

Sincerely,

Kate Crowley

Kate Crowley
Program Manager
Water Management Program

cc: Luzerne County Flood Protection Authority

Pennsylvania Natural Diversity Inventory

Scientific information and expertise for the conservation of Pennsylvania's native biological diversity

January 30, 2003

Fax 717-772-0271
717-772-0258

Bureau of Forestry

Patricia Coury
Department of the Army
Baltimore District, Corps of Engineers
PO Box 1715
Baltimore, MD 21203-1715

Re: Pennsylvania Natural Diversity Inventory Review for the Proposed Wilkes-Barre Levee-Raising Project, Luzerne County **PER NO: 14025**

Dear Ms. Coury:

In response to your request on January 17, 2003 the Pennsylvania Natural Diversity Inventory (PNDI) information system was used to gather information regarding the presence of resources of special concern within the referenced site. PNDI records indicate no occurrences of **plant** species of special concern within the project area, therefore we do not anticipate any impact on endangered, threatened, or rare plant species at this location.

However, because of the close proximity of the project to a species of special concern, our office recommends that you contact the Wildlife Impact Review Coordinator of the Pennsylvania Game Commission **(717) 783-5957** for recommendations on a potential impact on endangered animals in the area.

Pennsylvania Game Commission
Bureau of Wildlife Management
2001 Elmerton Avenue
Harrisburg, PA 17110-9797

This response represents the most up-to-date summary of the PNDI data files and is applicable for one year. However, an absence of recorded information does not necessarily imply actual conditions on site. A field survey of any site may reveal previously unreported populations. Should project plans change or additional information on listed or proposed species become available this determination may be reconsidered. Please phone this office if you have questions concerning this response or the PNDI system.

Sincerely,

Justin P. Newell
Environmental Review Specialist

Western Pennsylvania Conservancy
209 Fourth Ave.
Pittsburgh, PA 15222
(412)288-2777
www.paconserve.org

Pennsylvania Dept. of Conservation and Natural Resources
Bureau of Forestry
P. O. Box 8552
Harrisburg, PA 17105-8552
(717)787-3444

The Nature Conservancy
208 Airport Drive
Middletown, PA 17057
(717)948-3962
www.tnc.org

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
NORTHEAST REGION
One Blackburn Drive
Gloucester, MA 01930-2298

FEB 11 2003

Ms. Patricia Coury
Team Leader, Civil Project Development Branch
Planning Division
Department of the Army
Baltimore District, Corps of Engineers
PO Box 1715
Baltimore, MD 21203-1715

Dear Ms. Coury:

This responds to your inquiry dated January 17, 2003, requesting comments from the National Marine Fisheries Service (NOAA Fisheries) on the proposed Wilkes-Barre River Commons project in Luzerne County, Pennsylvania. The U.S. Army Corps of Engineers (ACOE) is preparing a Supplemental Environmental Impact Statement (SEIS) under the requirements of the National Environmental Policy Act (NEPA) to assess the potential impacts associated with making design modifications and recreational enhancements to the levee-raising project.

While federally endangered shortnose sturgeon (*Acipenser brevirostrum*) are located in the Susquehanna River, their range in this river system is believed to be restricted to the area below the Conowingo Dam in Maryland. Therefore, NOAA Fisheries does not expect this species to be present in the project area. No other federally listed or proposed threatened or endangered species and/or designated critical habitat for listed species under the jurisdiction of NOAA Fisheries are known to exist in the project area. Therefore, consultation pursuant to section 7 of the Endangered Species Act (ESA) of 1973, as amended, is not required. Should project plans change or new information becomes available that changes the basis for this determination, then consultation should be initiated.

Should you have any questions about these comments, please contact Kim Damon-Randall at (978) 281-9112.

Sincerely,

Mary A. Colligan
Assistant Regional Administrator
for Protected Resources

File Code: 1514-05 (A), NSP

United States Department of the Interior

NATIONAL PARK SERVICE
Philadelphia Support Office
200 Chestnut Street
Philadelphia, PA 19106-2878

IN REPLY REFER TO:
D18(PHSO-S&P/NR&EQ)

Patricia Coury
Department of the Army
Baltimore District, Corps Of Engineers
P.O. Box 1715
Baltimore, MD 21203-1715

FEB 1 2 2003

Dear Ms. Coury:

In addition to its responsibilities for management of units of the National Park System, the National Park Service is responsible for Stewardship of natural and cultural resources protected under the following items of federal legislation:

① The Wild and Scenic Rivers Act of 1968 as amended
② The Land and Water Conservation Fund Act of 1965 as amended
③ The Urban Park and Recreation Recovery Act of 1978
④ The Historic Sites Act of 1935 (National Natural Landmarks)
⑤ The Historic Preservation Act of 1966

This office has reviewed the information you provided us on the Intent to Prepare a Draft Supplemental Environmental Impact Statement for the Design Modifications and Recreational Enhancements to the Wyoming Valley Levee Raising Project at the Wilkes-Barre, PA Historic River Commons.

It does not appear to be within one mile of a National Park nor any known resource protected under legislative items #1 through #4.

For information on your projects impact on resources protected under item #5, The Historic Preservation Act of 1966, please contact:

State Historic Preservation Officer
Pennsylvania Historical and Museum Commission
P.O. Box 1026
Harrisburg, PA 17108-1026

Should you have any further questions regarding this project, please contact me at (215) 597-7701.

Sincerely,

Derrick M. Cook

Derrick M. Cook
Park Ranger
Stewardship & Partnerships

USDA NRCS
Natural Resources Conservation Service

Plymouth Field Office
911 W. Main St.
Plymouth, PA 18651

Fax: (570) 779-5714 Phone: (570) 779-0645

October 10,2001

To: Jeff Trulick
USAED-Baltimore

From: Rich Maculaitis, District Conservationist
USDA-NRCS, Plymouth Field Office

RE: Prime and Unique soils determination for Wyoming Valley Levee Raising Project
River Commons Park Section

Jeff,

As we discussed on the phone,the area above is on soils maps #17 and #23. The soils are mapped as Pope fine sandy loam, a Prime farmland soil ; however, the site has been historically disturbed with previous levee construction and not considered protected under the farmland protecting regulations as we see them.This determination is for the River Commons area only. Other areas along the River may hold more significance as Agricultural soils needing protection.

Richard Maculaitis

no 119

DEPARTMENT OF THE ARMY
BALTIMORE DISTRICT, CORPS OF ENGINEERS
P. O. BOX 1715
BALTIMORE, MARYLAND 21203-1715

REPLY TO
ATTENTION OF

January 17, 2003

Mr. Larry G. Williamson
Director
Bureau of Recreation and Conservation
Department of Conservation & Natural Resources
Room 555 Forum Building
Harrisburg, PA 17120-0155

Dear Mr. Williamson:

The U.S. Army Corps of Engineers, Baltimore District (Corps), is preparing a Supplemental Environmental Impact Statement (SEIS) under the requirements of the National Environmental Policy Act (NEPA) to assess the potential impacts associated with making design modifications and recreational enhancements to the levee-raising project through the downtown Wilkes-Barre River Commons, Luzerne County, Pennsylvania (Enclosure 1). The design modification and recreational enhancement features being evaluated include portals through the existing levee, a river landing, a pier/dock, an amphitheater and stage, a paved riverside access road, and various other minor recreational accoutrements (benches, trash receptacles, etc.).

The Corps, in cooperation with the local sponsor, the Luzerne County Flood Protection Authority, followed the public scoping process consistent with the procedural requirements of NEPA during the fall of 2002. The Notice of Intent (NOI) to prepare the SEIS was published in the Federal Register October 24, 2002 (Enclosure 2). The Corps solicited public comments through the required 45-day comment period and held a public scoping meeting on November 6, 2002, at the Kings College Burke Auditorium in Wilkes-Barre, Pennsylvania.

The Corps is initiating formal consultation to solicit your involvement and technical input early in the NEPA process. A copy of the draft SEIS will be provided to you when it is formally circulated for public and agency review in the spring of 2003. Please review the enclosures and provide preliminary comments within 30 days of receipt of this letter for inclusion in the draft SEIS. If you do not comment within 30 days, we will assume your agency has no comment at this time. Should you have any questions regarding your response, please contact Ms. Amy M. Guise at (410) 962-2941. Should you have questions regarding the overall project, please contact me at (412) 962-2668.

Sincerely,

Patricia Coury
Team Leader, Civil Project Development Branch
Planning Division

The DCNR Rivers Program Staff is given the responsibility to review and assess impacts from projects on or along designated PA Scenic Rivers. **Note:** We no longer assess impacts along 1-A Priority waterways. Since this project is not located in the designated corridor of a PA Scenic River it is not necessary for you to submit it for our review. The information you sent to us is being returned.

Date 3/7/03 Jane Fox
Jane Fox
DCNR Rivers Program

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
HARRISBURG, PENNSYLVANIA 17120

OFFICE OF
SECRETARY OF TRANSPORTATION

February 10, 2003

Ms. Patricia Coury
Team Leader
Civil Project Development Branch
Planning Division
U.S. Army Corps of Engineers
Baltimore District
P.O. Box 1715
Baltimore, MD 21203-1715

Dear Ms. Coury:

The Pennsylvania Department of Transportation (PENNDOT) has reviewed the Notice of Intent (NOI) to prepare a Draft Supplemental Environmental Impact Statement (DSEIS) for the Design Modifications and Recreational Enhancements to the Wyoming Valley Levee Raising Project at the Wilkes-Barre, Pennsylvania Historic River Commons as requested in your January 17, 2003 letter.

We recommend that the DSEIS discuss any effect that the proposed project may have on state roadways and/or bridges. Please forward one (1) copy of the DSEIS to this office. In addition, please forward copies of all Section 106 reports related to the proposed project, as well as copies of preliminary plans for the proposed project to Mr. Charles Mattei, P.E., District Engineer, Engineering District 4-0, P.O. Box 111, Scranton, Pennsylvania 18501.

We look forward to receipt of the DSEIS for our review and comment. If you have any questions regarding this response, please contact Dean A. Schreiber, P.E., at (717)-787-3310.

Sincerely,

Gary L. Hoffman, P.E.
Acting Deputy Secretary
for Highway Administration

Appendix D: Section 404(b)(1) Guidelines for Specification of Disposal Sites for Dredged and Fill Material Evaluation (40 CFR Part 230)

Design Modifications and Recreational Enhancements to the

Wyoming Valley Levee Raising Project at the Wilkes-Barre, PA River Commons

Section 404(b)(1) Guidelines for Specification of Disposal Sites for Dredged and Fill Material (40 CFR Part 230)

Section 404(b)(1) Evaluation

Clean Water Act

June 2004

The Wyoming Valley Levee Raising Project was authorized by the Water Resources Development Act of 1986 to investigate the need for flood control measures along the Susquehanna River in Wyoming Valley, Luzerne County, Pennsylvania. The purpose of this 404(b)(1) evaluation is to comply with the provisions of Section 404 of the Clean Water Act of 1977 [33 U.S.C. 1344(r)]. Previous analyses have been completed for different aspects of project, and are included in the 1995 GDM/SEIS and 1996 GDM/SEIS update. This analysis is being conducted to address design modifications and recreational enhancements to the Levee Raising project within the Wilkes-Barre River Commons.

I. PROJECT DESCRIPTION

a. Location - The Wyoming Valley lies in Luzerne County, in the northeast portion of the Commonwealth of Pennsylvania, approximately 110 miles northwest of New York City, and 90 miles northeast of Harrisburg, Pennsylvania. The Wilkes-Barre River Commons is on the left descending bank of the Susquehanna River approximately between the Luzerne County Courthouse and West River Street, in the city of Wilkes-Barre, PA.

b. General Description - The Baltimore District, U.S. Army Corps of Engineers, proposes to modify the existing flood damage reduction structures along the downtown Wilkes-Barre waterfront and add recreational enhancements to the area. The features that are being evaluated include portals, a river landing, a fishing platform/dock, an amphitheater and stage as described below.

River Landing - Upstream of the Market Street Bridge, a stability berm (approximately 900 feet long x 70 feet wide*)* was constructed in 1999 to stabilize the left descending riverbank prior to placement of additional levee fill. At an elevation of 525 feet above mean sea level (msl), the berm provides an existing foundation well above the typical river elevation onto which the river landing would be constructed. The normal river elevation during the summer is generally about elevation 512, but can vary between elevation 510 and 517. There are various construction methods, equipment, and sequences that a contractor could identify and select to construct these features. This section presents a reasonable construction approach that could be used to construct the subject features. It is identified to present an approach and quantify the environmental impacts thereof, but is not intended to dictate the construction methods, equipment, or sequences. For this evaluation, construction of the rockfill berm expansion was assumed to require staging equipment at the river's edge and manipulating materials in the river. The contractor may choose to utilize a variety of equipment to efficiently perform the work, including a boat and small floating work platforms.

River landing construction would take place over approximately 18 months and would utilize about 2 acres of project property (including material laydown and actual feature construction) within the previously disturbed footprint of levee construction activities. For the duration of the construction activities, sediment control activities would be implemented to minimize the effects of the ongoing work outside the area actively used during construction. This would include the installation of silt fences, temporary rip-rap placement to stabilize slopes susceptible to erosion, and using a street-sweeper to maintain clean road surfaces.

Berm Extension

As part of the river landing construction, the existing rockfill berm (i.e., shoreline) would be extended farther into the river in order to provide a larger surface area. The larger surface area is necessary to provide adequate space for use during festivals and public events. Considerations were made to examine alternative methods of expanding the surface area. Expanding the river landing landward by cutting the riverbank back was discarded because the change could compromise the levee integrity and undermines the original purpose for constructing the existing stability berm. Downstream expansion is restricted by the Market Street Bridge, and upstream expansion would require the undesirable filling of vegetated shallows and riparian fringe wetlands. Riverward expansion of the existing stability berm into the river represents the least damaging approach to providing the additional area needed for this feature.

Increasing the berm width would expand the existing berm surface and toe riverward by approximately 25 feet for a length of approximately 450 feet. This would result in the burial of approximately 0.26 acres (25 feet x 450 feet = 11,250 square feet) of river bottom below ordinary high water (elev. 516.7) in rockfill.

The berm expansion would be constructed using the same type of rockfill materials and methods that were used to construct the existing berm and the new berm surface would be completed at the same elevation (525 feet msl) as the existing berm.

Similar to the design of the original stability berm, a dug toe would also be required to provide scour protection along the toe of the newly expanded berm. The dug toe would require mechanically excavating a small, trapezoidal shaped trench in the riverbed (approximately 5 feet deep by 10 feet wide at the bottom), which would be backfilled with rockfill. The excavated river bottom materials would either be hauled off the site immediately for off-site disposal or would be placed atop the existing stability berm within areas constructed with silt fence and straw bales to de-water the materials. Free water would drain back into the river after suspended solids and sediment had settled.

The rockfill material used to backfill the dug toe and construct the expanded berm would consist of various sizes of hard, durable, and sound sandstone, siltstones, and hard shales. The rockfill material would be a well-graded mixture of stone with a maximum weight not exceeding 350 pounds (21-inch) with a minimum weight of at least 3 pounds (3-inch). In addition, not more than 10% by weight of soil and rock fragments passing the 3-inch screen would be permitted within the rockfill material in order to reduce turbidity during placement.

Within the proposed construction footprint, a lower rockfill berm, or something similar, would first be constructed on the existing berm slope and dug toe. It would be constructed to about elevation 515 and be about 15 feet wide to accommodate construction equipment. This lower berm would allow the excavation and backfilling of the new dug toe located directly beneath the groins. Prior to the placement of any fill, the contractor would survey the existing berm and riverbed and install the appropriate erosion and sediment controls as required.

Groin Construction and Removal

The concept design for construction of the river landing would include building a minimum of 2 rockfill groins at the upstream and downstream limits of the expanded berm. These groins would be constructed perpendicular to the existing berm and would extend slightly beyond the new berm and fishing platform. These groins would reduce the river velocity and currents within the work area, and thereby, reducing turbidity during excavation and rockfill placement. The rockfill material would be very clean and should not create problems with turbidity during placement.

The groins would extend into the river approximately 65 to 70 feet beyond the current edge of the existing berm and would be below ordinary high water (elev. 516.7). The groins would have a crest width of 12 to 15 feet with 1 vertical on 1.5 horizontal side slopes and be constructed to about 515 ft msl, or slightly higher. The base width of the groins on the riverbed would be about 60 feet wide

resulting in approximately 0.19 acres (two groins x 70 feet long x 60 feet wide at base = 8,400 square feet) of river bottom buried below ordinary high water. The top of the groins would be about three feet above the typical summer water surface elevation.

Upon completion of the all work on the expanded berm and fishing platform below the river level, the groins would be removed by mechanical extraction (likely a large crane). The rockfill material excavated from the groins would be reused and placed in the upper portion of the expanded berm. The bottom-most layer of rockfill would not be retrieved and would remain on the river bottom for improved fish habitat. For both groins, approximately 1,200 cubic yards of rockfill materials would likely be retrieved and then reused to construct the upper portion of the expanded berm. Groin construction was assumed to take approximately 2 to 3 weeks.

Fish Habitat Groins

To minimize impacts to the benthic habitat from construction, the riverward edge of the river landing would be configured in a saw tooth formation (in plan view) rather than in a straight line. The small groins would extend approximately 6 feet from the toe, be about 3 feet high by 5 feet wide and be at an approximate 25-foot spacing. This configuration would produce a series of alternating current deflectors and eddies that would be attractive to benthic invertebrates, minnows, and predatory fishes.

Fishing Platform/Dock – Connected to the river landing would be an approximately 340-foot long and 12-foot wide fishing platform/dock. Pedestrian access to the fishing platform/dock would be via a fixed ramp directly from the river landing or stairs. The dock itself would not have permanent boat slips, but would have adequate fendering to provide a location where boats could temporarily tie-up for a few hours at a time (public landing). Construction of this feature would not require any fill into the river or loss of benthic habitat, but would require the excavation and some replacement of the rockfill to permit driving of the piles. This would occur below ordinary high water (elev. 516.7) and would require excavation of a very small area (less than 0.1 acre) to permit placement of the landward piles. Each of the piles would also be inserted to a depth below ordinary high water.

Amphitheater and Stage - The amphitheater and stage would be constructed just downstream of the Market Street Bridge but upstream of the downstream portal. The amphitheater would consist of large stones or reinforced concrete blocks placed into the slope to provide bench seating for approximately 750 people. One row of seats would be above the riverside access road and the majority of the rows would be below the riverside access road grade. The performance stage would consist of a concrete slab placed on a layer of subbase stone on top of the existing rockfill berm.

The original concept design for the amphitheater and stage would have resulted in the stage being cantilevered over the river's edge. Construction for that design would have required establishing a large work area within the river by building rock groins into the water. This concept design and approach was evaluated and discarded to eliminate in-water construction for the stage and to avoid temporary or permanent effects to the river, submerged aquatic vegetation, or wetland fringe at the water's edge. Moving the stage landward (away from the river's edge) approximately 15 – 20 feet and developing a different approach to construction precludes the aforementioned potential effects.

c. Purpose - In urbanized areas of the Wyoming Valley, including the City of Wilkes-Barre, the levee and floodwall system have created a physical, psychological, and aesthetic barrier between the communities and the Susquehanna River. Through public workshops in 1999, a conceptual plan was conceived for the City of Wilkes-Barre riverfront that would restore the connection between the city and the river.

d. General Description of Discharge Material – The only activity resulting in loss to waters of the U.S. involve the construction of the river landing as described in detail above. Also, installation of some of the pilings for the fishing platform/dock would necessitate the excavation and replacement of some of the existing rockfill berm. Discharge material to be placed there would be a well-graded mixture of stone with a maximum weight not exceeding 350 pounds (21-inch) with a minimum weight of at least 3 pounds (3-inch). In addition, not more than 10% by weight of soil and rock fragments passing the 3-inch screen would be permitted within the rockfill material in order to reduce turbidity during placement.

e. Description of the Proposed Discharge Site – The location of the stabilization berm is in Wilkes-Barre between Stations 14+50 and 21+00. The discharge of materials would be at the toe of the existing stabilization berm onto the shallow river bottom, along the alignment for the groins, throughout the extent of the berm expansion, and at 25-foot intervals along the stability berm for the fish habitat. This would result in rockfill placement on approximately 0.45 acres (0.26 acre berm expansion plus 0.19 acre groin placement) of river bottom below ordinary high water (elev. 516.7). The river bottom throughout this area consists of a surficial unconsolidated layer of sands, gravels, and cobbles, which overlies a thick deposit of silt and clay. There is no submerged aquatic vegetation on the river bottom in this area and there are no wetlands.

f. Description of the Discharge Method – The rock fill material would likely be placed in the river by end dumping from trucks and placement by crane or excavator.

II. FACTUAL DETERMINATIONS

a. Physical Substrate Determinations

(1) Substrate Elevation and Slope – The stabilization berm extends approximately 65 feet into the river and then slopes into the river at an approximate 2:1 slope. The toe of the berm extends out into the river approximately 60 feet to an elevation of approximately 500 msl.

(2) Sediment Type – The sediment predominantly consists of a surficial unconsolidated layer of sands, gravels, and cobbles, which overlies a thick deposit of silt and clay.

(3) Discharge Material Movement – The addition to the stabilization berm, groins, and fish habitat are designed to not move from their placed locations.

(4) Physical Effects on Benthos – Placement of the rockfill for the stability berm would result in the loss of benthic habitat through displacement and inundation. Leaving the groin bases in place and the addition of the fish habitat would increase the benthic habitat by providing substantial refuge within the rock interstitial spaces. During the placement of materials, a localized increase in turbidity would be expected. Construction of the groins should minimize the turbidity by quieting flow in the construction area.

(5) Other Effects – N/A

(6) Actions Taken to Minimize Impacts –

1. Construction specifications provided to the contractor would state that compliance is mandatory for all applicable environmental protection regulations for pollution control and abatement. Environmental protection measures would be employed at the constructions site to avoid and minimize impacts to the aquatic environment resulting from the discharge. Additionally, the type of equipment and machinery used during construction would minimize effects.

2. Construction of the river landing would include construction of the rock groins to minimize current in the construction area.

3. De-watering material excavated for the dug toe would take place in a controlled fashion with silt fencing and straw bales to ensure de-watering with a minimum of suspended materials returning to the waterway.

4. For materials used in the construction of the toe of the river landing, not more than 10% by weight of soil and rock fragments passing the 3-inch screen would be permitted within the rock fill material in order to reduce turbidity during placement. Rock fill used for the rock groins and fish habitat would be similarly clean.

5. The original concept design for the amphitheater and stage would have resulted in the stage being cantilevered over the river's edge. Construction for that design would have required establishing a large work area within the river by building rock groins into the water. This concept design and approach was evaluated and discarded to eliminate in-water construction for the stage and to avoid temporary or permanent effects to the river, submerged aquatic vegetation, or wetland fringe at the water's edge. Moving the stage landward (away from the river's edge) approximately 15 – 20 feet and developing a different approach to construction precludes the aforementioned potential effects.

6. For prior work on the levee raising in the Wilkes-Barre area, a National Pollution Discharge Elimination System (NPDES) Permit was issued to the Luzerne County Flood Protection Authority. This permit provided coverage under the NPDES general permit for discharges of stormwater associated with construction activities and includes an approved erosion and sediment control plan. If the proposed action proceeds to design and construction, the NPDES permit would be formally amended according to the selected plan. The LCFPA would continue to hold the permit and selected contractors would be identified as co-permitees for the duration of the construction process.

b. Water Circulation, Fluctuation, and Salinity Determinations

(1) Water –

a. Salinity – No change expected.

b. Chemistry – No change expected.

c. Clarity – Minor and temporary change expected.

d. Color – Minor and temporary change expected.

e. Odor – No change expected.

f. Taste – N/A

g. Dissolved Gas Levels – No change expected.

h. Nutrients – No change expected.

i. Eutrophication – Not expected to occur.

j. Others as Appropriate – None expected.

(2) Current Patterns and Circulation –

a. Current Patterns and Flow – Minor localized changes in current flows or patterns due to the placement of the stone with in the Susquehanna River. See Section 4.2.7 Hydrology and Hydraulics.

b. Velocity – No discernable change during flood stage (See Section 4.2.7) and a slight, localized permanent change in velocity at less than Agnes-level flood stages. No major adverse impacts are anticipated.

c. Stratification – No change expected.

d. Hydrologic Regime – No change expected.

(3) Normal Water Level Fluctuations – No change expected.

(4) Salinity Gradients – No change expected.

(5) Actions to Minimize Impacts –

1. The construction of the river landing and fishing platform/dock would conform to all applicable Pennsylvania Water Quality Standards.

2. Erosion protection measures are included in the project design to prevent project features from being adversely affected by the induced localized flow turbulence. A dug toe, backfilled with rockfill, would be provided at the riverside toe of the river landing

area to ensure structural stability. The dug toe would protect the project features from localized scouring of river bottom materials from undermining the river landing. In addition, the river landing and amphitheater/stage areas would be paved. Therefore, the erosion potential of the features at the river landing and amphitheater/stage areas would be very low.

3. The remaining proposed project features (paving of the access road, upstream portal, and downstream portal) would not encroach into the river cross section at all. Therefore, these proposed features would have no impact on the river hydraulics during flood events.

c. Suspended Particulate/Turbidity Determinations

(1) Expected Changes in Suspended Particulates and Turbidity Levels in Vicinity of Disposal Site – Minor and short-term increases may occur in the immediate vicinity during construction.

(2) Effects on Chemical and Physical Properties of the Water Column

a. Light Penetration – A minor and temporary decrease is anticipated during construction. No change expected after construction.

b. Dissolved Oxygen – No change expected.

c. Toxic Metals or Organics – No change expected.

d. Pathogens – No change expected.

e. Aesthetics – A temporary reduction in aesthetic value expected during construction. No permanent change expected.

f. Others as Appropriate – N/A.

(3) Actions Taken to Minimize Effects –

1. Actions taken to minimize effects include best management practices such as staked silt fences would minimize erosion and turbidity and erosion during construction activities.

2. Construction of the river landing would include construction of the rock groins to minimize current in the construction area.

3. De-watering material excavated for the dug toe would take place in a controlled fashion with silt fencing and straw bales to ensure de-watering with a minimum of suspended materials returning to the waterway.

4. For materials used in the construction of the toe of the river landing, not more than 10% by weight of soil and rock fragments passing the 3-inch screen would be permitted within the rock fill material in order to reduce turbidity during placement. Rock fill used for the rock groins and fish habitat would be similarly clean.

d. Contaminant Determinations – HTRW investigations have determined that no contaminant sources are located in the construction area. All fill materials would conform to all applicable Pennsylvania Water Quality Standards to ensure minimal disruption to the aquatic ecosystem.

e. Aquatic Ecosystem and Organism Determinations –

(1) Effects on Plankton – Minor and temporary effects expected because of a temporary increase in suspended sediment during construction.

(2) Effects on Benthos – Placement of the stone for the stability berm would result in the loss of benthic habitat through displacement and inundation. Leaving the groin bases in place and creating fish habitat would increase the benthic habitat by providing substantial refuge within the rock's interstitial spaces. A temporary increase in turbidity levels during construction may cause benthic habitat modifications because of settling fines.

(3) Effects on Nekton – The placement of materials would likely cause nektonic species to leave the area until the completion of disturbance.

After construction is completed, leaving the base of the groins and creating the new fish habitat should improve habitat for nekton.

(4) Effects on the Food Web – Minor, temporary, and localized effects to the food web could be expected as a result of construction.

(5) Effects on Special Aquatic Sites – Fill activities into waters of the United States would not occur in wetlands or in areas where submerged aquatic vegetation exists. As such, there would not be effects to special aquatic sites.

(6) Threatened and Endangered Species – There are no threatened or endangered species known to exist in the project impact area.

(7) Other Wildlife – The loss of River bottom would displace benthic species during construction, but the benefits of leaving the groin bottom in place and the newly constructed fish habitat at the toe of the river landing should benefit other aquatic species.

(8) Actions to Minimize Impacts – Creating fish habitat and leaving the base of the groins in place would improve benthic invertebrate habitat and fish habitat.

f. Proposed Disposal Site Determinations –

(1) Mixing Zone Determinations – The river bottom materials excavated for the dug toe would either be hauled off the site immediately for off-site disposal or would be placed atop the existing stability berm within areas constructed with silt fence and straw bales to de-water the materials. Free water would drain back into the river after suspended solids and sediment had settled. De-watered materials would then be removed from the site and transported for off-site disposal.

(2) Determination of Compliance with Applicable Water Quality Standards – Fill would be clean material that would meet applicable water quality standards. Work would be performed in accordance with all applicable State water quality standards; the requirements of the NPDES permit, and effluent from the disposal site would meet all State water quality standards.

(3) Potential Effects on Human Use Characteristics – human use of the area for disposal would be limited to activities permitted.

a. Municipal and Private Water Supply – No effects expected.

b. Recreational and Commercial Fisheries – Minor improvement in fish habitat expected.

c. Water Related Recreation – Recreational use to increase because of all features constructed. Fishing platform/dock would provide improved access for public fishing.

d. Aesthetics – Reconnecting downtown Wilkes-Barre with the Susquehanna River would greatly improve the aesthetics within the project area.

e. Parks, National and Historic Monuments, National Seashore, Wilderness Areas, Research Sites, and Similar Preserves – The River Commons Park, with its monuments and trees would not be affected by these project modifications. Additionally, the project modifications would be visually obscured from the historic structures on the east side of River Street. Implementation of any of the Alternatives would not be expected to result in any disturbance of, or affects to, cultural resources and would not impact any historic features in the River Commons Park Historic District. Ongoing coordination with the State Historic Preservation Officer is expected to confirm that the design of the changes would not affect the historic character of the River Commons Park Historic District.

g. Determination of Cumulative Effects on the Aquatic Ecosystem – There would be a permanent loss of approximately 0.26 acre of benthic habitat below ordinary high water when the river landing berm is extended. There would be only a temporary and minor effect on the aquatic ecosystem during placement of materials for the groins, but a permanent improvement in the habitat because of the fish habitat creation and leaving the rock fill base of the groins (approximately 0.19 acre) in place.

h. Determination of Secondary Effects on the Aquatic Ecosystem – The construction of these features (river landing, etc.) are intended to attract large numbers of visitors and create recreational opportunities. When large numbers of people congregate for festivals or similar civic events, it would be reasonable to expect a substantial increase in the amount of litter and debris that could end up in the river. Trash receptacles are included in the overall plan to encourage waterfront

visitors to maintain a trash-free setting. Operation and maintenance of the area would include grounds maintenance and garbage collection on a routine basis to minimize these effects. Improving the fish habitat and providing public access for fishing (fishing platform/dock) would likely increase fishing pressure leading to an associated increase the quantity of litter (e.g., styrofoam worm containers, cans/bottles) along the waterfront. The increased areas paved throughout the waterfront also would create a minor increase in stormwater runoff.

III. FINDING OF COMPLIANCE

a. No adaptations of the Section 404(b)(1) guidelines were made relative to this evaluation.

b. No other reasonable alternatives are available for the action that would accomplish the project objectives.

c. The planned placement of material would comply with the Pennsylvania Water Quality Standards.

d. The proposed river landing and fishing platform/dock construction and placement of rock fill is not expected to violate the Toxic Effluent Standard of Section 307 of the Clean Water Act.

e. The use of the selected site would not harm any endangered species or their critical habitat.

f. No marine Sanctuaries, as designated by the Marine Protection, Research, and Sanctuaries Act of 1972, are in the project area.

g. The proposed construction of the fishing platform/dock and river landing would not result in significant adverse effects on human health and welfare, including municipal and private water supplies, recreation and commercial fishing, plankton, fish and shellfish, wildlife, and special aquatic sites. The life stages of aquatic life and other wildlife would not be adversely affected. Significant adverse impacts on aquatic ecosystem diversity, productivity, and stability and recreation aesthetics and economic values would not occur.

h. On the basis of the Section 404(b)(1) Guidelines, the proposed construction laydown areas and discharge site for the material are specified as complying with the inclusion of appropriate and practical conditions to minimize pollution or

adverse effects to the aquatic ecosystem. Sediment erosion control devices would be implemented in compliance with Federal, State, and local laws.

Appendix E: Draft General Conformity Determination

Introduction

This analysis supports the conformity determination for the preferred alternative associated with the Design Modifications and Recreational Enhancements to the Wyoming Valley Levee Raising Project at the Wilkes-Barre, Pennsylvania River Commons and demonstrates that this proposal would comply with Clean Air Act General Conformity Rule. The recommended plan includes construction and operation of the design modifications and recreational enhancements.

Regulatory Background

The 1990 Federal Clean Air Act Amendments directed the Environmental Protection Agency (EPA) to develop two separate federal conformity rules. Those rules (promulgated as 40 CFR Parts 51 and 93) are designed to ensure that federal actions do not cause or contribute to air quality violations in areas that do not meet the national ambient air quality standards. The two rules include transportation conformity, which applies to transportation plans, programs, and projects; and general conformity, which applies to all other non transportation-related projects, including the Design Modifications and Recreational Enhancements to the Wyoming Valley Levee Raising Project at the Wilkes-Barre, PA River Commons.

The general conformity regulation requires that federal agencies sponsoring non transportation-related activities show that the emissions associated with those activities conform to state implementation plans (SIPs) if emissions meet specific criteria. First, the emissions must occur in areas designated as nonattainment areas for one or more of the federal ambient air quality standards. Second, those emissions must exceed certain *de minimus* threshold levels.

The EPA Office of Air Quality Planning and Standards has set National Ambient Air Quality Standards (NAAQS) for six principal pollutants, called "criteria" pollutants. They include carbon monoxide, nitrogen dioxide, ozone, lead, particulates, and sulfur dioxide. For Luzerne County, only ozone does not attain the air quality standard. Areas that are designated in nonattainment of the ozone standard are further classified, in order of increasing severity, as Incomplete Data, Marginal, Moderate, Serious, Severe, and Extreme; the designation for Luzerne County is Marginal. Luzerne County is further sub-classified as an ozone transport region.

Ozone is a gas that forms in the presence of sunlight in the atmosphere when three atoms of oxygen are combined (O_3). Ozone is not emitted directly into the air by any aspect of the project, but is created at ground level by a chemical reaction between oxides of nitrogen (NOx), and volatile organic compounds (VOC).

Motor vehicle exhaust and industrial emissions, gasoline vapors, and chemical solvents are some of the major sources of NOx and VOC, also known as ozone precursors. Strong sunlight and hot

weather cause ground-level ozone to form in harmful concentrations in the air. Many urban areas tend to have high levels of ozone, but other areas are also subject to high ozone levels as winds carry NOx emissions hundreds of miles away from their original sources. Due to the proximity to the urbanized east coast of the United States, Luzerne County, Pennsylvania is considered an ozone transport region.

Conformity Evaluation

The Clean Air Act General Conformity Rule (58 FR 63214, November 30, 1993, Final Rule, Determining Conformity of General Federal Actions to State or Federal Implementation Plans) dictates that a conformity review be performed when a Federal action generates air pollutants in a region that has been designated a nonattainment or maintenance area for one or more NAAQS.

The general conformity rule was designed to ensure that Federal actions do not impede local efforts to control air pollution. It is called a conformity rule because Federal agencies are required to demonstrate that their actions "conform with" (i.e., do not undermine) the approved State Implementation Plan for their geographic area. The purpose of conformity is to (1) ensure Federal activities do not interfere with the air quality budgets in the SIPs; (2) ensure actions do not cause or contribute to new violations, and (3) ensure attainment and maintenance of the NAAQS. Federal agencies make this demonstration by performing a conformity review. The design modifications and recreational enhancements at Wilkes-Barre would be subject to detailed conformity determinations unless these actions are clearly considered *de minimus* emissions; use of these thresholds assures that the conformity rule covers only major federal actions. EPA has set the *de minimus* threshold at 100 tons per year for NOx and 50 tons per year for VOCs for an ozone transport region such as Wilkes-Barre, Pennsylvania.

Methodology

A conformity review requires consideration of both direct and indirect air emissions associated with the proposed action. Direct emissions are those that occur as a direct result of the action, and occur at the same time and place as the action. Sources that would contribute to direct emissions from this project would include demolition or construction activities associated with the proposed action and equipment used to facilitate the action (e.g., construction vehicles). Indirect emissions are those that occur at a later time or distance from the place where the action takes place, but may be reasonably anticipated because of the proposed action. To be counted as an indirect emission, the Federal proponent for the action must have continuing control over the source of the indirect emissions. Sources of indirect emissions for the design modifications and recreational enhancements would include commuter activity to and from the construction site (e.g., employee vehicle emissions). Both stationary and mobile sources must be included when

calculating the total of direct and indirect emissions, but this project involves only mobile sources.

Air pollutant emissions generated by the proposed action were calculated to determine whether the total of direct and indirect emissions for NOx and VOCs would be below the conformity *de minimus* limits. The preferred alternative, with the most equipment operating over the longest duration was assessed in detail in order to ensure a conservative evaluation. The other alternatives considered in the SEIS would result in less emissions. Table E-1 shows a list of equipment that could be used to construct the project and was developed based on the engineering estimates. Each of the pieces of equipment to be used for the project was assumed to operate all day (8 hours) during each workday of the entire 30-month construction period (600 days). While assuming all of the equipment operating the entire project duration is unrealistic, this represents a bounding, albeit conservative approach to quantifying the direct emissions.

Given the hours of operation assumed, emissions were estimated based on equipment-specific emission factors recommended by the EPA for fuel-burning equipment (USEPA, 1998 and USEPA, 2000) that could be used.

Indirect emissions were calculated assuming personnel drove 100 vehicles per day, 20 days per month, on a 40 mile round trip per day commute, over the 30 month project construction period (100 x 20 x 40 x 30 = 2,400,000 miles). Fifty percent of the miles were assumed to be with a light duty gas powered vehicle (LDGPV) and fifty percent were assumed to be with a light duty gas powered truck (LDGPT). Emission Factors were taken from EPA's AP-42 Compilation of Air Pollutant Emission Factors, Appendix H, Light-Duty Gasoline Vehicles (Table 1.1A.1) and Light-Duty Gasoline Trucks (Table 2.1A.1). Emissions per mile used for LDGPV and LDGPT were an average of values for vehicles from 1990-1998, assuming 50,000-mile emission level.

The total direct and indirect emissions predicted for VOCs and NOx were summed to develop a total release for the preferred alternative. The 30-month totals were then divided by 30 to get a monthly release and then multiplied by 12 to calculate an annual release. This annual figure was then compared to the *de minimus* thresholds to determine whether the annual emissions from direct and indirect sources for each pollutant exceeded the *de minimus* thresholds. Estimated annual emissions did not exceed the threshold limits.

The sum total of direct and indirect sources for NOx and VOCs for the preferred alternative resulted in a predicted annual release of 39.09 tons of NOx (38.33 tons direct emissions + 0.76 tons indirect emissions) and 3.56 tons of VOCs (2.79 tons direct emissions + 0.77 tons indirect emissions). The annual emission rates for these criteria pollutants in an ozone transport region are 100 tons/year for NOx and 50 tons/year for VOCs. The estimates for the preferred alternative represent only 39% of the annual limit for NOx and 7% of the annual limit for VOCs. Although construction activities would result in short-term, increased air emissions, these emissions would be less than the *de minimus* thresholds and are not regionally significant (less than 10 percent of the nonattainment area's total emissions) (PADEP, 2003); therefore, a conformity assessment is not required. Because projected emissions are below threshold levels, the action is exempt from further conformity analysis.

EQUIPMENT													
		Excavators	**Front End Loader**	**Dozer**	**Backhoe**	**Dump Truck**	**Crane**	**Roller**	**Compactor**	**Boat**	**Asphalt Paver**	**Grader**	**Articulating Truck**
Equipment Description	Specification	CAT M315	CAT 973C	CAT D7R Series II	CAT 3116	End Dump	CAT 500D	IR DD-110	CB-534C	Generic	Gomaco GP2000	CAT 615C Series II	CAT 725
	Engine/ Capacity	3054 TA	3306 TA	3176C		18 CY	Truck Boom	4BT	CAT 3054T		4-71T Detroit Diesel Engine	Cat 3306	CAT 3176B
	Horsepower	114	210	240	201	260	200	100	100	100	190	265	451
	Fuel Type	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Emission Factors (grams/hp-hr)*													
NOx		7.53	6.5	6.37	9.38	8.38	8.38	8.38	7.53	8.38	8.38	6.5	6.37
VOCs		0.66	1.1	0.09	0.07	0.68	0.68	0.68	0.66	0.68	0.68	1.1	0.09
NOx horsepower x emission factor (g/hr)		858.42	1365	1528.8	1885.38	2178.8	1676	838	753	838	1592.2	1722.5	2872.87
VOCs horsepower x emission factor (g/hr)		75.24	231	21.6	14.07	176.8	136	68	66	68	129.2	291.5	40.59
Emission Amounts (tons/hour)	Conversion factor of grams per ton	907,185	907,185	907,185	907,185	907,185	907,185	907,185	907,185	907,185	907,185	907,185	907,185
NOx		0.0009	0.0015	0.0017	0.0021	0.0024	0.0018	0.0009	0.0008	0.0009	0.0018	0.0019	0.0032
VOCs		0.00008	0.00025	0.00002	0.00002	0.00019	0.00015	0.00007	0.00007	0.00007	0.00014	0.00032	0.00004
Preferred Alternative	Hours**	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800
NOx (tons/hr x hrs = total release)		4.54	7.22	8.09	9.98	11.53	8.87	4.43	3.98	4.43	8.42	9.11	15.20
VOCs		0.40	1.22	0.11	0.07	0.94	0.72	0.36	0.35	0.36	0.68	1.54	0.21

Table E-1: Direct Emissions Calculation Summary

Direct Emissions Totals for 30-Month Project: NOx – 95.82 Tons; VOCs – 6.97 Tons
Direct Emissions Totals for 12-Month Period: NOx – 38.33 Tons; VOCs – 2.79 Tons

* Emission factors taken from EPA Report No. NR-009A, Exhaust Emission Factors for Non-road Engine Modeling--Compression-Ignition, USEPA Office of Mobile Sources, Assessment and Modeling Division. Where specific equipment data were not included, Average Emission Test Results for 1988-1995 Model Engine Years (Appendix B) were used.
** Hours assumes all equipment operates 20 workdays/month x 8 hours/day for the entire project duration of 30 months (4,800 hours).

Table E-2: Indirect Emissions Summary

Equipment Description		Light Duty Gas Powered Vehicle	Light Duty Gas Powered Truck
Emission Factors (grams/mile)*			
NOx		0.6005	0.861
VOCs		0.7766	0.6633
Vehicle Miles Driven**		1,200,000	1,200,000
Total Indirect Emissions (grams)			
NOx		720,600	1,033,200
VOCs		931,920	795,960
Conversion factor of grams per ton		907,185	907,185
Total Indirect Emissions (tons)			
NOx		0.79	1.14
VOCs		1.03	0.88

Direct Emissions Totals for 30-Month Project: NOx – 1.90 Tons; VOCs – 1.93 Tons
Direct Emissions Totals for 12-Month Period: NOx – 0.76 Tons; VOCs – 0.77 Tons

* Emission Factors Taken from EPA's AP-42 Compilation of Air Pollutant Emission Factors, Appendix H, Light-Duty Gasoline Vehicles (Table 1.1A.1) and Light-Duty Gasoline Trucks (Table 2.1A.1) Emissions per mile used for LDGPV and LDGPT are average of value for vehicles from 1990-1998 assuming 50,000-mile emission level.
** Assumes 100 vehicles per day, 20 days per month, 40 mile round trip per day commute, for 30 month project (100 x 20 x 40 x 30 = 2,400,000 miles). Assume half of miles are with a LDGPV and half are with a LDGPT.

GENERAL CONFORMITY - RECORD OF NON-APPLICABILITY

Project Name:	Design Modifications and Recreational Enhancements to the Wyoming Valley Levee Raising Project at the Wilkes-Barre, PA River Commons
Project Point of Contact:	Bill Abadie, Environmental Team Leader U.S. Army Corps of Engineers P.O. Box 1715, Baltimore, MD 21203-1715 Phone: 410-962-4713

General Conformity under the Clean Air Act, Section 176 has been evaluated for the project described above according to the requirements of 40 CFR 93, Subpart B. The requirements of this rule are not applicable to this project/action because:

_____ The project/action is an exempt action under 40 CFR 93.153(c) or (d), (SPECIFY APPLICABLE EXEMPTION CATEGORY AND REGULATORY CITATION)

OR

_____ Total direct and indirect emission from this project/action have been conservatively estimated at 39 tons per year for NOx and 3.6 tons per year for VOCs and are well below the conformity threshold value established at 40 CFR 93.153(b) of 100 tons per year for NOx and 50 tons per year for VOCs;

AND,

The project/action is not considered regionally significant under 40 CFR 93.153(i).

Supporting documentation and emissions estimates appear in the Supplemental EIS for this project.

SIGNED_____

Bill Abadie, Environmental Team Leader